

# **NVR User Manual**

For H.264 8/16/24-channel network video recorder  
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# CAUTION

- Please read this user manual carefully to ensure that you can use the device correctly and safely.
- There may be several technically incorrect places or printing errors in this manual. The updates will be added into the new version of this manual. The contents of this manual are subject to change without notice.
- This device should be operated only from the type of power source indicated on the marking label. The voltage of the power must be verified before using the same. Kindly remove the cables from the power source if the device is not to be used for a long period of time.
- Do not install this device near any heat sources such as radiators, heat registers, stoves or other devices that produce heat.
- Do not install this device near water. Clean only with a dry cloth.
- Do not block any ventilation openings and ensure proper ventilation around the machine.
- Do not power off the NVR at normal recording condition. The correct operation to shut down the NVR is to first stop recording and then use “shut-down” button from the menu, and finally switch off the main power.
- This machine is for indoor use only. Do not expose the machine in rain or moist environment. In case any solid or liquid get inside the machine’s case, please turn off the device immediately and get it checked by a qualified technician.
- Do not try to repair the device by yourself without technical aid or approval.
- When this product is in use, the relevant contents of Microsoft, Apple and Google will be involved in. The pictures and screenshots in this manual are only used to explain the usage of our product. The ownerships of trademarks, logos and other intellectual properties related to Microsoft, Apple and Google shall belong to the above-mentioned companies.
- This manual is suitable for 8/16/24-channel network video recorders. All examples and pictures used in the manual are from 16-channel NVR.

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# 1 Introduction

## 1.1 NVR Introduction

This series of devices are standard 8/16/24 CH real-time 1080P/720P/D1 high resolution NVR, which adopt the most advanced SOC technique to ensure high definition recording in each channel and realize outstanding robustness of the system. The series of product support 8/16/24 CH IP input, simultaneous 4 CH playback, and HDMI 1080 P high resolution display. All of these features make the device meet different security requirements of home, financial, commerce, enterprise, transportation and government, etc.

## 1.2 Main Features

### **COMPRESSION FORMAT**

- Standard H.264 compression with low bit rate and better image quality

### **LIVE SURVEILLANCE**

- Support HDMI/CVBS/ VGA output
- 8 CH NVR supports 8 CH 1080@15fps or 4CH 1080P @ 30 fps or 8 CH 720P@ 30fps IP video input
- 16 CH NVR supports 16 CH 1080@15fps or 8CH 1080P @ 30 fps or 16 CH 720P@ 30fps IP video input
- 24 CH NVR supports 16 CH 1080P @30fps or 24 CH 1080P @15fps or 24 720P @30fps IP video input
- Support channel security by hiding live display
- Display the local record state and basic information
- Support USB to make full control

### **RECORD MEDIA**

- Support eight SATA HDDs to record for a longer time without any limitation

### **BACKUP**

- Support USB 2.0 devices to backup
- Support built-in SATA DVD writer to backup
- Support saving recorded files with AVI standard format to a remote computer through internet

### **RECORD & PLAYBACK**

- Record modes: Manual, Schedule, Motion detection and Sensor alarm recording
- Support recycle after HDD full
- Support 1080P/720P/D1 recording
- Resolution, frame rate and picture quality are adjustable
- Two record search mode: time search and event search.
- Support 4 screen playback simultaneously
- Support deleting and locking the recorded files one by one

- Support remote playback in Network Client through LAN or internet

## **ALARM**

- Support 8/16 CH alarm input and 4 generic output
- Support schedule for motion detection and sensor alarm
- Support pre-recording and post recording
- Support linked channels recording once motion or alarm triggered on certain channel

## **SECURITY**

- Customize user right: log search, system setup, two way audio, file management, disk management, remote login, live view, manual record, and playback.
- Support 1 administrator and 63 users.
- Support event log recording and checking, events unlimited

## **NETWORK**

- Support TCP/IP, DHCP, PPPoE, DDNS protocol
- Support IE browser to do remote view
- Support setup client connection amount
- Support dual stream. Network stream is adjustable independently to fit the network bandwidth and environment.
- Support picture snap and color adjustment in remote live
- Support remote time and event search, and channel playback
- Support remote full menu setup, changing all the NVR parameters remotely
- Support mobile surveillance by phones with iPhone & Android OS
- Support CMS/NVMS to manage multi devices on internet

## 2 Hardware Installation

Check the unit and the accessories after getting the device. Please don't power up the unit till the physical installation is complete.

### 2.1 Install Hard Drive & DVD Writer

#### 2.1.1 Install Hard Drive

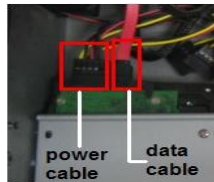
**Notice:** 1. This series support eight SATA hard drives. Please use the hard drive the manufacturers recommend specially for security and safe field.

2. Please calculate HDD capacity according to the recording setting. Please refer to "Appendix B Calculate Recording Capacity".

Step 1: Unscrew and open the case and then unscrew the screws in the both sides to take out of the upper mounting bar as shown below:



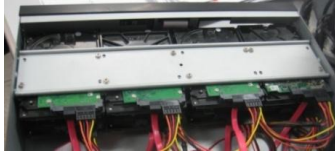
Step 2: Put the HDD under the lower mounting bar. Then tighten the screws and connect the power and data cables. The pictures are shown as follows:



Step 3: Install other three HDD according to above-mentioned method. Then cover the upper mounting bar and tighten the screws to fix it. Put the HDD under it and tighten the screws with the screwdriver as shown below:



Step 4: Install other three HDD under the upper mounting bar as shown below:



Step 5: Cover the back cover of the device and tighten it.

## 2.1.2 Install DVD Writer

**Notice:** 1. The writers must be the compatible devices we recommend. Please refer to “Appendix C Compatible Devices”

2. This device is only for backup.

Step 1: Open the back cover and loosen the screws in the both sides of the case to take out of the mounting bars as shown below:



Step 2: Loosen the four screws in the back of the front panel as shown below and then take out of the brace with a triangular mark (if there is no such brace, please skip this step).



Step 3: Install the DVD holder attached with the device. Try to place the holder farther away from the front and then tighten it. Then, put the DVD with the holder into the case and tighten it.



Step 4: Connect the power and data cables and install the upper mounting bar. Then, tighten the screws in the both sides.



**Note:** If you install a DVD writer, you can only install 4 HDD disks at most. Because too much room has been taken up.

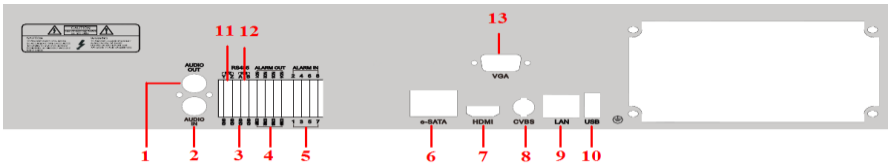
## 2.2 Front Panel Descriptions

**Notice:** The front panel descriptions are only for reference; please make the object as the standard.

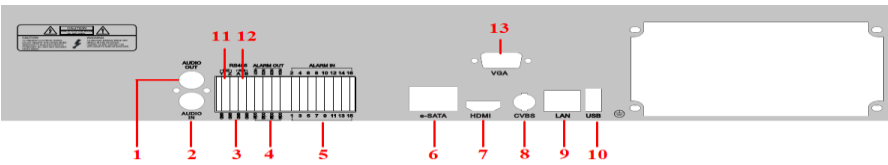
| Type             | Name                                                                                | Function                                                    |
|------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------|
| Indicator        | Power                                                                               | The power indicator turns blue when DVR is powered up.      |
|                  | HDD                                                                                 | The light turns blue when HDD is writing and reading.       |
|                  | Net                                                                                 | The light turns blue when it is able to access the network. |
|                  | Backup                                                                              | The light turns blue when baking up files and data.         |
|                  | Play                                                                                | The light turns blue when playing video.                    |
|                  | REC                                                                                 | The light turns blue when recording.                        |
| Function Buttons | AUDIO /+                                                                            | 1. Adjust audio 2. Increase the value in setup              |
|                  | P.T.Z / -                                                                           | 1. Enter PTZ mode 2. Decrease the value in setup            |
|                  | MENU                                                                                | Enter Menu in live                                          |
|                  | INFO                                                                                | Check the information of the device                         |
|                  | BACKUP                                                                              | Enter backup mode in live                                   |
|                  | SEARCH                                                                              | Enter search mode in live                                   |
|                  | Exit                                                                                | Exit the current interface                                  |
|                  |  | Manually record                                             |
|                  |  | Play/Pause                                                  |
|                  |  | Rewind key                                                  |
|                  |  | Fast forward                                                |
| Digital Key      | 1-9                                                                                 | Input digital number and select camera                      |
|                  | 0/--                                                                                | Input number 0, the number above 10                         |
| Direction Key    | Direction Key                                                                       | Change direction                                            |
|                  | Multi-Screen Switch                                                                 | Change the screen mode                                      |
|                  | Enter                                                                               | Confirm selection                                           |
| USB              | USB                                                                                 | To connect external USB device like USB mouse or USB flash  |

## 2.3 Rear Panel Instructions

The interfaces of the following rear panels are for reference only. Please take the real object as standard.

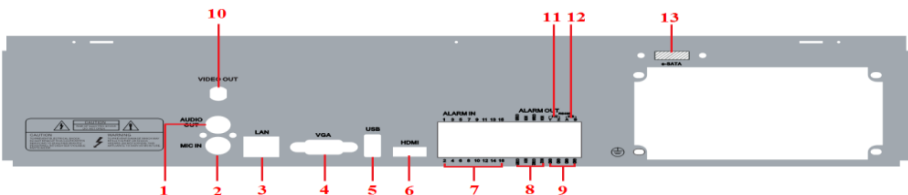


Rear Panel for 8-ch



Rear Panel for 16-ch

| Item | Name      | Description                                                    |
|------|-----------|----------------------------------------------------------------|
| 1    | Audio out | Audio output, connect to the sound box                         |
| 2    | Audio in  | 1 CH audio input                                               |
| 3    | GND       | Grounding                                                      |
| 4    | Alarm Out | Relay Output. Connect to external alarm.                       |
| 5    | Alarm in  | Alarm Inputs for connecting sensors                            |
| 6    | E-SATA    | Connect to external SATA HDD for backup                        |
| 7    | HDMI port | Connect to high-definition display device                      |
| 8    | CVBS port | Connect to monitor                                             |
| 9    | LAN       | Network port                                                   |
| 10   | USB port  | Connect to external USB devices like USB flash, USB mouse, etc |
| 11   | P/Z       | Connect to speed dome; Y is TX+, Z is TX- (unavailable)        |
| 12   | K/B       | Connect to keyboard, A is TX+, B is TX- (unavailable)          |
| 13   | VGA port  | VGA output, connect to monitor                                 |

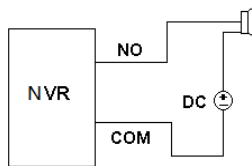


Rear Panel for 24-ch

| Item | Name      | Description                                                    |
|------|-----------|----------------------------------------------------------------|
| 1    | Audio out | Audio output, connect to the sound box                         |
| 2    | MIC In    | 1 CH MIC input                                                 |
| 3    | LAN       | Network port                                                   |
| 4    | VGA port  | VGA output, connect to monitor                                 |
| 5    | USB port  | Connect to external USB devices like USB flash, USB mouse, etc |
| 6    | HDMI port | Connect to high-definition display device                      |
| 7    | Alarm In  | Alarm Inputs for connecting sensors                            |
| 8    | Alarm Out | Relay Output. Connect to external alarm.                       |
| 9    | GND       | Grounding                                                      |
| 10   | Video Out | Connect to monitor                                             |
| 11   | P/Z       | Connect to speed dome; Y is TX+, Z is TX- (unavailable)        |
| 12   | K/B       | Connect to keyboard, A is TX+, B is TX- (unavailable)          |
| 13   | E-SATA    | Connect to external SATA HDD for backup                        |

#### Alarm Out Connection:

Pull out the green terminal blocks and loosen the screws in the alarm out port. Then insert the wires of the alarm output devices into the port of NO and COM separately. Finally, tighten the screws. The external alarm output devices also need power supply, you can connect the power supply as per the following figures.



## 2.4 Remote Controller

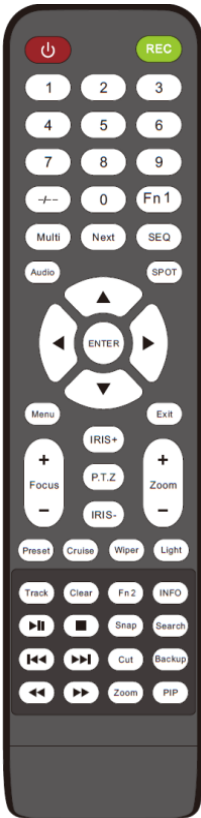
It uses two AAA size batteries.

- Open the battery cover of the Remote Controller.
- Place batteries. Please take care of the polarity (+ and -).
- Replace the battery cover.

The buttons of remote controller are as shown below.

*Key points to check in case the remote doesn't work.*

1. Check batteries polarity and the remaining charge in the batteries.
2. Check IR controller sensor for any masking.
3. Check the ID of the remote with respect to the NVR.

**Remote Controller**

| Button                                 | Function                                                                                                                                                                                        |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Button                           | Switch off—to stop NVR. Use it before turning off the power                                                                                                                                     |
| Record Button                          | To record manually                                                                                                                                                                              |
| -/-- /0-9 Digital Button               | Input number or choose camera                                                                                                                                                                   |
| Fn1 Button                             | Unavailable temporarily                                                                                                                                                                         |
| Multi Button                           | To choose multi screen display mode                                                                                                                                                             |
| Next Button                            | To switch the live image                                                                                                                                                                        |
| SEQ                                    | To enter into auto dwell mode                                                                                                                                                                   |
| Audio                                  | To enable audio output in live mode                                                                                                                                                             |
| Switch                                 | To switch the output between BNC and VGA                                                                                                                                                        |
| Direction button                       | To move cursor in setup or pan/title PTZ                                                                                                                                                        |
| Enter Button                           | To confirm the choice or setup                                                                                                                                                                  |
| Menu Button                            | To enter into menu                                                                                                                                                                              |
| Exit Button                            | To exit the current interface                                                                                                                                                                   |
| Focus/IRIS/Zoom/PTZ                    | PTZ Control button                                                                                                                                                                              |
| Preset/Cruise/Track/Wiper/Light Button | Enter preset/cruise/Track/Wiper/Light setup in PTZ mode. You shall press PTZ button to go into PTZ setup mode. Then select a channel and press PTZ button again prior to enabling these buttons |
| Clear Button                           | To return to the previous interface                                                                                                                                                             |
| Fn2 Button                             | Unavailable temporarily                                                                                                                                                                         |
| Info Button                            | Get information about NVR like firmware version, HDD information                                                                                                                                |
|                                        | To control playback. Play/Pause/Stop/Previous Section/Next Section/Rewind/Fast Forward                                                                                                          |
| Snap Button                            | To take snapshots manually                                                                                                                                                                      |
| Search Button                          | To enter into search mode                                                                                                                                                                       |
| Cut Button                             | To set the start/end time for backup in playback mode                                                                                                                                           |
| Backup Button                          | To enter into backup mode                                                                                                                                                                       |
| Zoom Button                            | To zoom in the images                                                                                                                                                                           |
| PIP Button                             | To enter into picture in picture setting mode                                                                                                                                                   |

If it still doesn't work, please try using a good known remote, or contact your dealer.

### Operation processes with remote controller to control multi-NVR

The default device ID of the NVR is 0. It's not necessary to reset the device ID when a remote is to be used to control a single NVR. However when controlling multiple NVRs with multiple remote controllers, you would need to configure the device ID, please refer to below steps:

Activate remote controller to control the NVR: Turn the IR sensor of the remote controller towards the IR receiver on the front panel, press the number key 8 twice on the remote, then input device ID of the NVR to be controlled (Range from: 0-65535; the default device ID is 0) press ENTER to confirm.

You can check the device ID of a NVR from System Setup→Basic→Device ID. You can also set multiple NVRs with the same device ID however this can cause interference if the NVRs are kept close to each other.

## 2.5 Control with Mouse

### 2.5.1 Connect Mouse

---

It supports USB mouse through the ports on the rear panel.

If mouse is not detected or doesn't work, check below steps:

1. Make sure the mouse is plugged in the USB mouse port.
2. Try with a good know mouse.

### 2.5.2 Use Mouse

---

#### **During live:**

Double-click on any camera window to see the full screen. Double-click again to return to the previous screen.

Right click to reveal the control menu on the screen. Right click again to hide the menu.

#### **In Configuration:**

Click to enter a particular option. Right click to cancel the option or to return to the previous menu.

In order to input a value in a particular screen, move cursor to the input box and click. An input window will appear as shown below. It supports digits, alphabets and symbols input. Click Shift button to input Capital letters and symbols; click Shift button again to return.

It supports mouse drag. Take setting up motion detection area for example: Click customized, hold down the left button and drag to set motion detection area.



**Digital Numbers and Letters Input Window**

#### **In Playback:**

Click to choose the options. Right click to return to live mode.

#### **In Backup:**

Click to choose the options. Right click to return to previous picture.

#### **In PTZ Control:**

Click left button to choose the buttons to control the PTZ. Click right button to return to live.

---

**Note:** Mouse is the default tool for all operations unless an exception, as indicated.

---

## 3 Basic Function Instruction

### 3.1 Startup and Shutdown

Please make sure all the connections are done properly before you power on the unit. Proper startup and shutdown are crucial to expanding the life of your NVR.

#### 3.1.1 Startup

---

**Step 1:** Connect with the source power.

**Step 2:** The device will boot and the power LED would turn blue.

**Step 3:** A WIZZARD window will pop up and show some information about time zone, time setup, network configuration, record configuration and disk management. You can set up here and refer to the concrete setup steps from the corresponding chapters. If you don't want to set up Wizard, please click Exit button to exit.

---

*Note: The default output is HDMI output. Long press Exit/Stop key can switch the output among CVBS, VGA & HDMI.*

---

#### 3.1.2 Shutdown

---

You can shut down the device by using IR remote controller and mouse.

**By IR remote controller:**

**Step 1:** Press Power button. This will bring up a shutdown window. The unit will shut down by clicking "OK" button.

**Step 2:** Disconnect the power.

**By mouse:**

**Step 1:** Click  button and select "Shut Down" icon. This will take you to a shutdown window.

**Step 2:** Click OK. Then the unit will power off after a while.

**Step 3:** Disconnect the power.

### 3.2 Login

You can login or log off the NVR system. Once logged off you cannot do any other operation except changing the multi-screen display.

---

**Notice:** The default user name and password is "admin" and 123456".

For complete operational steps for changing password, adding or deleting user please refer to section 5.7 User management Configuration.

---

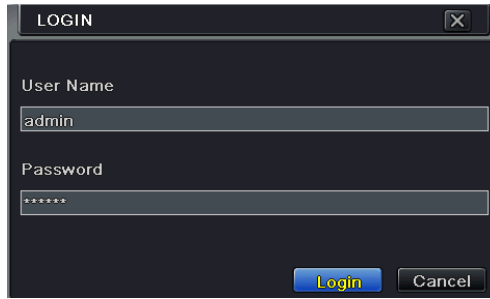


Fig 3-1 Login

### 3.3 Live preview

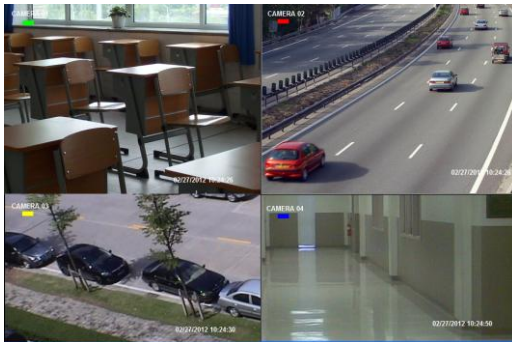


Fig 3-2 Live Preview Interface

| Symbol | Meaning                 |
|--------|-------------------------|
| Green  | Manual record           |
| Yellow | Motion detection record |
| Red    | Sensor Alarm record     |
| Blue   | Schedule record         |

### 3.4 Live playback

Click Playback button to playback the record. Refer to Figure 3-3. You can do complete operation by clicking the buttons on screen.



**Fig 3-3 Live Playback**

## 4 Add IP Cameras

This chapter mainly introduces how to connect multiple IP cameras through NVR. Once you finish adding IP cameras, you can see the live images through the monitor of the NVR.

### To add IP cameras via LAN:

**Step 1:** Please Enter into Menu→IP Camera tab. Refer to Fig 4-1. Click “Search” button to search the devices in the same local network.



Fig 4-1 Device Management

**Step 2:** Enter into the search tab. Click “Refresh” to refresh the searched devices. You can modify the IP address of the searched device by checking the device and clicking “Setup” button.

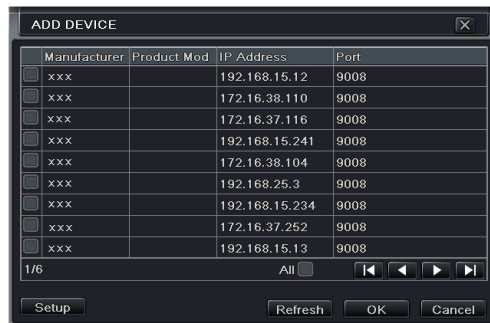


Fig 4-2 Search Devices

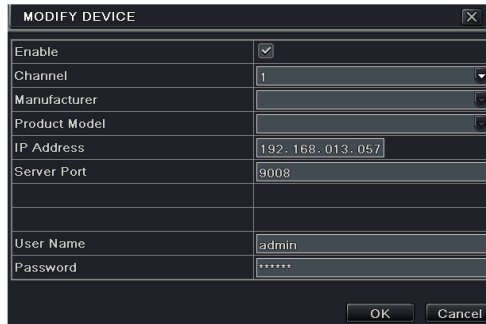
---

**Note:** If the network of IP cameras and NVR are in LAN, their IP address must be in the same network segment. For example: If the IP address of NVR is 192.168.013.057, the IP address of IP camera must be 192.168.013.XXX.

---

**Step 3:** Choose the searched devices and click “OK” button to add these devices. The added cameras will be listed in the device management interface.

**Step 4:** Choose the camera device and click “Setup” button to enable the camera. Refer to Fig 4-3. Check the “enable” checkbox, select channel and input the username and password of this device. Then click “OK” to save settings.



|               |                                     |
|---------------|-------------------------------------|
| MODIFY DEVICE |                                     |
| Enable        | <input checked="" type="checkbox"/> |
| Channel       | 1                                   |
| Manufacturer  |                                     |
| Product Model |                                     |
| IP Address    | 192.168.013.057                     |
| Server Port   | 9008                                |
|               |                                     |
| User Name     | admin                               |
| Password      | *****                               |
| OK Cancel     |                                     |

**Fig 4-3 Add Device**

#### **To add IP cameras via WAN:**

**Step 1:** Please enter Menu→IP Camera tab. Refer to Fig 4-1.

**Step 2:** Click “Add” button to pop up a window similar to Fig 4-3. You need to check “Enable” box, select channel, manufacturer and product model and manually input IP address, server port, username and password of this device.

---

**Note:** If the NVR and the IP cameras you want to add are in WAN, the IP address of the IP camera input here must be WAN IP. You should forward the LAN IP address and port of the IP camera in the router and use its WAN IP address, provided that the IP camera is in local area network, otherwise, the NVR cannot connect this IP camera.

---

## 5 Main Menu Setup Guide

Click right mouse or press Exit button on the front panel to display the main menu toolbar on the bottom of the screen. Refer to Fig 5-1:



Fig 5-1 Main Menu Toolbar

Click the  icon beside the screen mode to display a channel select dialog.

**Screen Mode:** You can choose a screen display mode to show the live images.

**PIP:** Click this button to set PIP. Click this button to choose the bigger picture and then click the little PIP button beside the word “None” to set the smaller picture. After that, you can see a picture in picture.

**Dwell:** Dwell means to display live images from different cameras in a sequence. The images may be displayed as a single channel or in a grid fashion from different cameras. Dwell mode is enabled only when the chosen display mode is not able to display all the available cameras.

**Color:** If this button is enabled, you can adjust the color of live images.

**E-Zoom:** Single channel large screen electronic amplification.

**Audio:** Enable sound.

**PTZ:** Click the PTZ button to control rotation position, speed and auto scan of the PTZ connected to the IP camera.

**Record:** Click this button to start/stop recording.

**Playback:** Click this button to playback the recorded files.

You can click Move Tool button and drag it anywhere with the left mouse to move the main menu bar anywhere.

Click Main Menu button to pop up a window as Fig 5-2; you can also press MENU button on the front panel or operate with remote controller to display the main menu. Clicking Setup icon will pop-up the configuration menu:

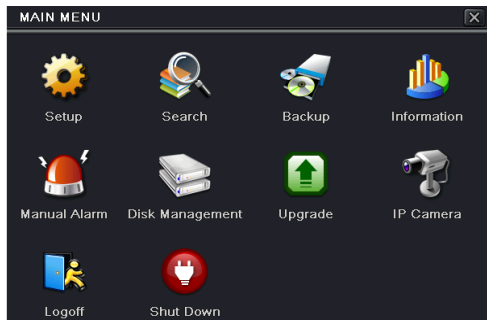
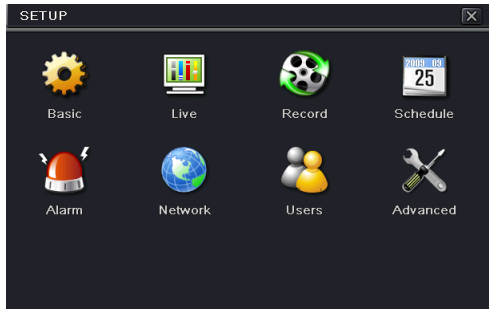


Fig 5-2 Main Menu



System Setup

## 5.1 Basic configuration

Basic configuration includes three sub menus: system, date & time and DST.

### 5.1.1 System

**Step 1:** Enter into Menu→Setup→Basic→System. Refer to Fig 5-3:

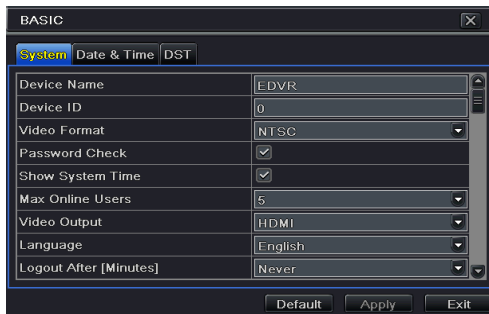


Fig 5-3 Basic Configuration-Basic

**Step 2:** In this interface you can set up the device name, device ID, video format, max network user, VGA resolution and language. The definitions for every parameters display as below:

**Device Name:** The name of the device as it may display on the client end or on CMS, this would help the user to recognize the device remotely.

**Device ID:** This ID is used to map the NVR with IR remote controller and speed dome cameras.

**Video Format:** Two modes: PAL and NTSC. User can select the video format according to the cameras being used.

**Password Check:** If enabled the user would need to input the user name and the password for performing corresponding operations.

**Show System Time:** If selected, displays the current time during live monitoring.

**Max Online Users:** To set the maximum number of concurrent user logins in the NVR.

**Show wizard:** If selected, the GUI would launch the startup wizard on every boot, allowing user to do basic setup.

**Video Output:** Resolution of live display interface.

**Language:** To set up the menu language.

---

**Note:** After changing the language and video output, the device needs to login again.

---

**Logout After (Minutes):** You can set up the screen interval time (30s, 60s, 180s, 300s). If there is no any operation within the setting period, the device will auto logout and return to the login interface.

**No Image When Logout:** If selected, there will be no image showing when logout.

## 5.1.2 Date & Time

**Step 1:** Enter into Menu→Setup→Basic→Date & Time tab. Refer to Fig 5-4:

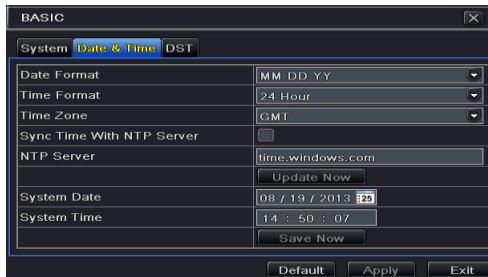


Fig 5-4 Basic Configuration-Date & Time

**Step 2:** Set the date format, time format, time zone in this interface; checkmark “sync time with NTP server” to refresh NTP server date. You can adjust system date manually

**Step 3:** Click “Apply” button to save the settings.

## 5.1.3 DST

**Step 1:** Enter into Menu→Setup→Basic →DST interface. Refer to Fig 5-5:

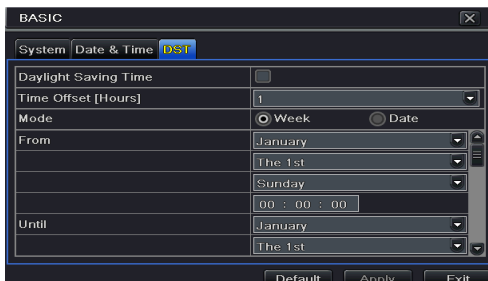


Fig 5-5 Basic Configuration-DST

**Step 2:** In this interface, enable daylight saving time, time offset, mode, start & end month/week/date, etc.

**Step 3:** Click “Apply” button to save the setting.

## 5.2 Live Configuration

Live configuration includes three submenus: live, main monitor and mask.

### 5.2.1 Live

In this interface, you can set up camera name.

**To set up camera name:**

**Step 1:** Enter into Menu→Setup→Live. Refer to Fig 5-6:

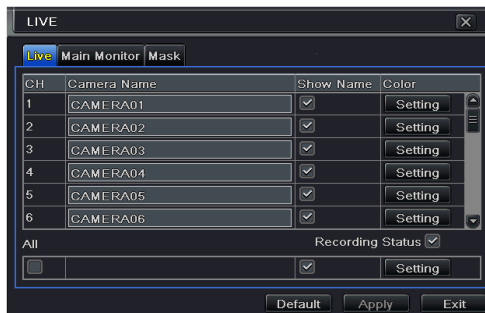


Fig 5-6 Live Configuration→Live

**Step 2:** A software keyboard will pop up by clicking camera name area. Click the letters and (or) digital numbers on the keyboard to input the name you want to display in live image.

**Step 3:** Checkmark the camera name in the show name area.

All channels will show the camera name by checking “All” checkbox.

**To set up color:**

**Step 1:** Click “Setting” button for a particular camera/channel to see a window as below:



**Step 2:** In this interface, you can adjust brightness, hue, saturation and contrast in live. Click “OK” button to save the setting.

## 5.2.2 Main Monitor

The main monitor settings allow you to set camera sequence in live display mode. Operate the following steps to set main monitor:

**Step 1:** Enter into Menu→Setup→Live →Main Monitor interface. Refer to Fig 5-7:

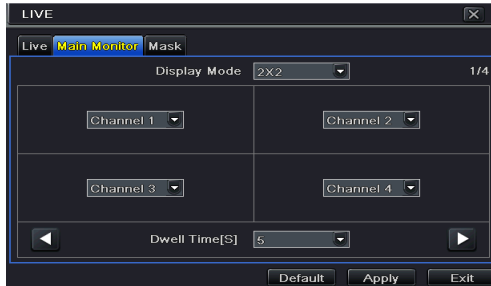


Fig 5-7 Live Configuration-Main Monitor

**Step 2:** Select display mode and channel.

**Step 3:** Select dwell time. Click ◀ button to set up the dwell time of the previous channel. Click ▶ button to set the dwell time of the latter channel groups.

**Step 4:** Click “Apply” to save the setting.

## 5.2.3 Mask

If there is something you don’t want to display in the live image. You can set mask. For a given channel a maximum of three areas can be masked. If the mask function is not available in the added IP camera, the mask function here will not take effect.

**To set up mask area:**

**Step 1:** Enter into Menu→Setup→Live →Mask interface.



Fig 5-8 Live Configuration-Mask

**Step 2:** Click Setting button to go into live image.

**Step 3:** Press and drag the left mouse button to set mask area as shown below.

**Step 4:** Right click to exit the mask setting interface.

**Step 5:** Click Apply button to save the setting.

#### To delete mask area

**Step 1:** Click Setting button in the mask interface.

**Step 2:** Select a certain masked area and double click to delete that masked area.

**Step 3:** Then click Apply button to save the setting.



**Fig 5-9 Setting Mask Area**

## 5.3 Record Configuration

Record configuration includes six sub menus: enable, record bit rate, time, recycle record, stamp and snap.

Before Configuration, please make sure your NVR has been installed with HDD and has completed its initialization.

### 5.3.1 Enable

**Step 1:** Enter into Menu→Setup→Record→Enable tab. Refer to Fig 5-10:

**Step 2:** Checkmark record and audio.

**Step 3:** Select All to set up the same settings for all channels.

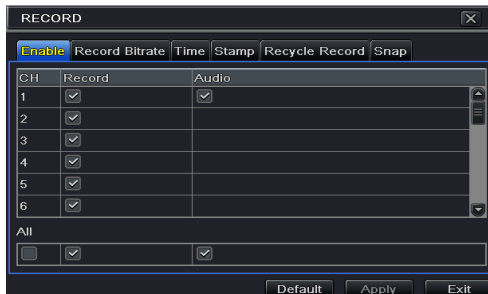


**Fig 5-10 Record Configuration-Record**

| Parameter | Meaning                                           |
|-----------|---------------------------------------------------|
| Record    | To enable/disable recording for the channel       |
| Audio     | To enable/disable audio recording for the channel |

### 5.3.2 Record Bitrate

**Step 1:** Enter into Menu→Setup→Record →Record Bitrate. Refer to Fig 5-11:

**Step 2:** Set up rate, resolution, quality, encode and max bit stream.

**Step 3:** Select “All” to set the same settings for all channels.

**Step 4:** Click “Apply” button to save the setting.



Fig 5-11 Record Configuration-Record Bitrate

| Parameter      | Meaning                                                                                                                  |
|----------------|--------------------------------------------------------------------------------------------------------------------------|
| Rate           | Range from: 1-30 ( NTSC ) 1-25(PAL)                                                                                      |
| Resolution     | Supports 1080P, 720P, D1. Please select it as per the resolution your IP camera supports.                                |
| Quality        | The higher the value is, the clearer the recorded image is. Six options: lowest, lower, low, medium, higher and highest. |
| Encode         | VBR and CBR                                                                                                              |
| Max bit stream | Range from: 256~12288kbps                                                                                                |

If the value of the parameter is set to exceed the maximum resources of the system, the system will automatically adjust it.

### 5.3.3 Time

**Step 1:** Enter into Menu→Setup→Record → Time interface to set recording time. Refer to Fig 5-12:

**Step 2:** Set Pre-alarm record time and post-alarm record time. Select “All” to set the same settings for all channels.

**Step 3:** Click “Apply” to save the setting.



Fig 5-12 Record Configuration-Time

**Pre-alarm Record Time:** Set the time in seconds to pre-record before the actual recording begins.

**Post-alarm Record Time:** Set the time in seconds to post-record after the actual recording has finished, five options: 10s, 15s, 20s, 30s, 60s, 120s, 180s and 300s.

**Expire Time:** Set the expiration time for recorded video. If the set date is overdue, the recorded files will be deleted automatically.

### 5.3.4 Stamp

This provides an option to enable or disable the Camera Name and the Time stamp on the video. The user can also choose a position for the stamp on the screen.

To set up stamp as follows:

**Step 1:** Enter into Menu→Setup→Record→Stamp interface. Refer to Fig 5-13:



Fig 5-13 Record Configuration-Stamp

**Step 2:** Checkmark camera name and time stamp. Click Setting button to set up the position of the stamp. You can drag the camera name and time stamp at random positions. Refer to below figures

**Step 3:** Select “All” to set up all channels with the same parameters.



Before drag



After drag

### 5.3.5 Recycle Record

This option is used to recycle the HDD space once it is full. If enabled, the system will automatically delete the old records and recycle the space if it is completely utilized. The setting steps are as follows:

**Step 1:** Enter into Menu→Setup→Record →Recycle Record interface;

**Step 2:** Checkmark recycle record to activate auto recycling. If the option is disabled or not selected, the NVR would stop recording once HDD is full.

**Step 3:** Click “Apply” button to save the setting.

### 5.3.6 Snap

In this interface, user can set up Resolution, quality, snap interval, snap number.

## 5.4 Schedule Configuration

Schedule configuration includes three sub menus: schedule, motion and sensor.

### 5.4.1 Schedule

This tab allows defining schedule for normal recording for seven days of a week, 24 hours of a day. Every row denotes an hourly timeline for a day. Click the grid to do relevant setup. A highlighted area denotes selected timeline. Operate the following steps to set schedule:

**Step 1:** Enter into Menu→Setup→Schedule interface. Refer to Fig 5-14:

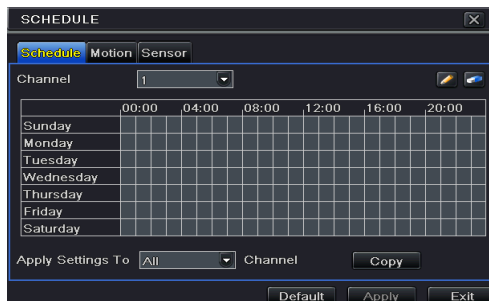


Fig 5-14 Schedule Configuration-Schedule

**Step 2:** Select channel and click “” button to add a certain day schedule. Click “” button to delete the selected schedule.

If you want to apply the schedule setting of a certain channel to other or all channels, you need to select channel and click “Copy” button.

You can also set week schedule by double-clicking in the grinding area. This will take you to see a dialog box as Fig 5-15.

**Step 1:** Select a day and click “Add” button to schedule start time and end time. Then click  to save.

**Step 2:** Select other days and add schedule or copy settings from one schedule to the others under the Apply Settings To item.

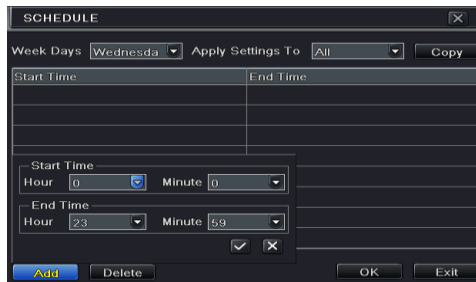


Fig 5-15 Schedule-Week Schedule

## 5.4.2 Motion Schedule

This tab allows setting schedule for motion based recording. The setting steps are as follows:

**Step 1:** Enter into Menu→Setup→Schedule →Motion tab.

**Step 2:** The setup steps for schedule for motion based recording are similar to normal schedule setup. You can refer to 5.4.1 Schedule for details.

---

**Note:** The default schedule of motion based recording is 24 x 7. If you want to activate motion based recording, you must enable motion alarm and set up schedule for motion alarm (see Chapter 5.5.2 Motion Alarm for more details).

---

## 5.4.3 Sensor Schedule

This tab allows to set schedule for sensor based recording. The setting steps are as follows:

**Step 1:** Enter into Menu→Setup→Schedule→Sensor interface.

**Step 2:** The setup steps for schedule for sensor based recording are similar to normal schedule setup (see Chapter 5.4.1 Schedule for details).

---

**Note:** The default schedule of sensor based recording is 24 x 7. If you want to activate sensor based recording, you must enable sensor alarm and set up schedule for sensor alarm (see Chapter 5.5.1 Sensor Alarm for more details).

---

## 5.5 Alarm Configuration

Alarm configuration includes four sub menus: sensor, motion, other alarm and alarm out.

### 5.5.1 Sensor Alarm

Sensor includes three sub menus: basic, alarm handling and schedule.

Operate the following steps to configure sensor alarm:

**Step 1:** Enter into Menu→Setup→Alarm →Sensor→Basic tab. Refer to Fig 5-16:

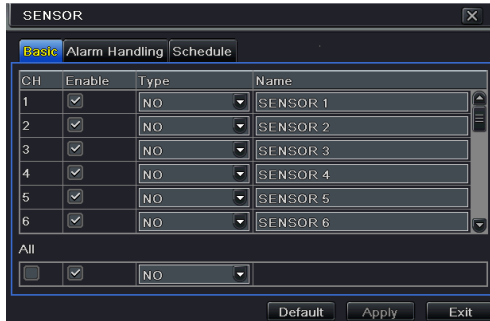


Fig 5-16 Alarm Configuration-Sensor-Sensor

**Step 2:** Enable channels by checking the checkboxes beside the desired channels.

**Step 3:** Set the alarm type according to triggered alarm type. Two option: NO and NC.

**Step 4:** Click “Apply” button to save the setting.

**Step 5:** Enter into Alarm Handling tab. Refer to Fig 5-17. Select hold time and then click “Setting” button to pop up a dialog box as shown in Fig 5-18.

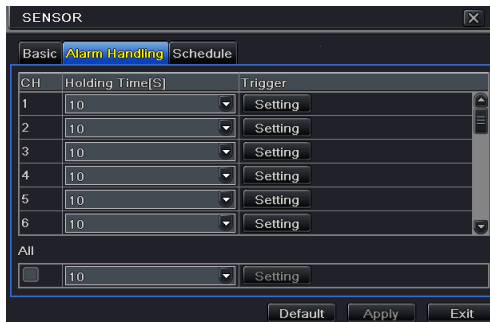


Fig 5-17 Alarm Configuration-Sensor-Alarm Handling

**Step 6:** Enter into alarm tab to select the options to handle alarm.

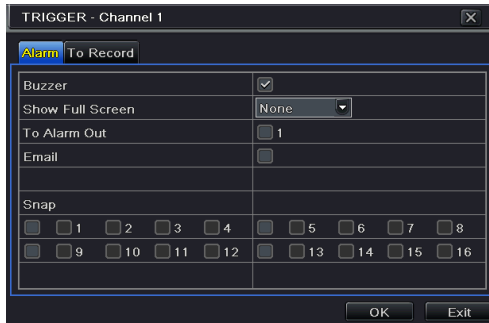


Fig 5-18 Alarm Handling-Trigger

**Buzzer:** If selected, the local buzzer would be activated on an alarm.

**Show Full Screen:** If selected, there will pop up the chosen channel on the monitor on an alarm trigger.

**To Alarm Out:** If selected, this would trigger external relay output on an alarm.

**Email:** If selected, the NVR will send an email alert to the preconfigured email address in case of a sensor based alarm from the particular input.

**Snap:** If selected, the system will snap images of the checked channels on an alarm and save them in the HDD automatically.

**Step 7:** Enter into To Record tab. Select recording channels. It would be recorded in case of an alarm. Click OK button to save the setting.

**Step 8:** Enter into Schedule tab. The setting steps for schedule for sensor based alarm are similar to normal schedule setup. You can refer to 5.4.1 Schedule for details. This step is very important for sensor alarm. Even if you have enabled the sensor alarm for all channels and set up the trigger, you will not see the result of sensor alarm if no schedule is added.

If you have set schedule for sensor based recording in the same timeline, recordings can also be triggered.

## 5.5.2 Motion Alarm

Motion includes two sub menus: motion and schedule. The steps to set motion alarm are as follows:

**Step 1:** Enter into Menu→Setup→Alarm →Motion→Motion tab. Refer to Fig 5-19:

**Step 2:** Enable motion alarm, set alarm hold time which refers to the time till which the system will wait for further detection of motion. e.g. If the holding time is set to 10 seconds, once the system detects a motion, it will go into alarm but would not detect any other motion alarm (specific to channel) until 10 seconds. If there is other motion detected during this period it is considered it as continuous movement, otherwise it will be considered as a single motion.

**Step 3:** The setup steps of motion trigger are similar to “Alarm Handling” (See Chapter 5.5.1 Sensor →Alarm Handling setting for more details).

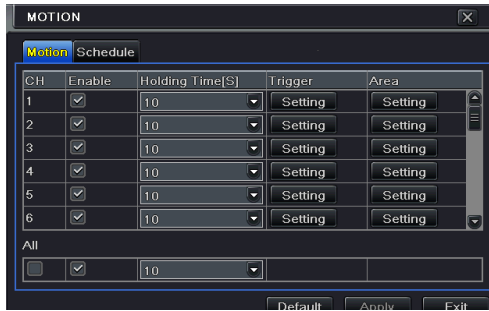


Fig 5-19 Alarm Configuration-Motion

**Step 4:** After clicking Area button, a dialog box will pop-up as Fig 5-20:



Fig 5-20 Motion-Area

**Step 5:** In the Area interface, you can drag slide bar to set the sensitivity value (1-8). The higher the value is the more sensitive it is to motion. Since the sensitivity is influenced by color and time (day or night), you can adjust its value according to the practical conditions. Left click the grid and drag to delete area. Click icon to set the whole area as detection area. Click icon to clear the set detection area. Click icon to test the sensitivity as per the local conditions. Once motion is sensed, it displays a figure icon. Click icon, to save the setting. Click icon to exit the current interface.

---

**Note:** Prior to setting motion detection field it is recommended that you click icon to clear the existing field and set afresh.

---

**Step 6:** Select “All” to set the same settings for all channels.

**Step 7:** Click “Apply” button to save the setting.

**Step 8:** Enter into Schedule tab. The setting steps for schedule for motion based alarm are similar to normal schedule setup (see Chapter 5.4.1 for more details).

### 5.5.3 Other Alarm

This tab gives a choice to configure alarm for Disk Full, IP Conflict, the Disconnect event or Disk Attenuation.

**Step 1:** Enter into Menu → Setup → Other Alarm. Refer to Fig 5-21:

| OTHER ALARM                                                                                                     |                            |
|-----------------------------------------------------------------------------------------------------------------|----------------------------|
| Alarm Type                                                                                                      | Disk Full                  |
| Buzzer                                                                                                          |                            |
| Email                                                                                                           |                            |
| To Alarm Out                                                                                                    | <input type="checkbox"/> 1 |
| Disk Shortage Alarm                                                                                             | 128 MB                     |
| <input type="button" value="Default"/> <input type="button" value="Apply"/> <input type="button" value="Exit"/> |                            |

**Fig 5-21 Other Alarm**

**Step 2:** Use the dropdown menu and select the event or the alarm.

**Step 3:** Check the required trigger options.

If the selected event is “Disk Full”, then use the drop down box for “Disk Shortage Alarm” to choose a threshold value for remaining HDD space. If the threshold value is reached, the system will trigger the Disk Full Alarm.

**Step 4:** Click “Apply” to save the setting.

### 5.5.4 Alarm Out

Alarm out includes three sub menus: alarm out, schedule and buzzer.

**To set up alarm out:**

**Step 1:** Enter into Menu → Setup → Alarm Out. Refer to Fig 5-22:

**Step 2:** Input relay name and select hold time.

| ALARM OUT                                                                                                       |             |                 |
|-----------------------------------------------------------------------------------------------------------------|-------------|-----------------|
| Alarm Out   Schedule   Buzzer                                                                                   |             |                 |
| CH                                                                                                              | Relay Name  | Holding Time[S] |
| 1                                                                                                               | ALARM OUT 1 | 10              |
|                                                                                                                 |             |                 |
|                                                                                                                 |             |                 |
|                                                                                                                 |             |                 |
|                                                                                                                 |             |                 |
| All <input type="checkbox"/> <input type="checkbox"/> 10                                                        |             |                 |
| <input type="button" value="Default"/> <input type="button" value="Apply"/> <input type="button" value="Exit"/> |             |                 |

**Fig 5-22 System Configuration-Alarm Out**

**Step 3:** Enter into Schedule tab. This will go into schedule setup interface. The setting steps for schedule for alarm out are similar to normal schedule setup (see Chapter 5.4.1 for details). This step is very important for alarm out. Even if you have enabled alarm out in the motion based alarm or sensor based alarm, you will not see the result of alarm out if no schedule is added here.

**To set up buzzer:**

**Step 1:** Enter into Menu→Setup→Alarm Out →Buzzer.

**Step 2:** Checkmark Buzzer and set buzzer alarm hold time. This would trigger the buzzer when the system is on an alarm.

## 5.6 Network Configuration

Network configuration includes four submenus: network, Email, Server and other settings. Network settings must be configured if NVR is used for monitoring over network.

### 5.6.1 Network

**To set up network:**

**Step 1:** Enter into Menu→Setup→Network→Network tab. Refer to Fig 5-23:

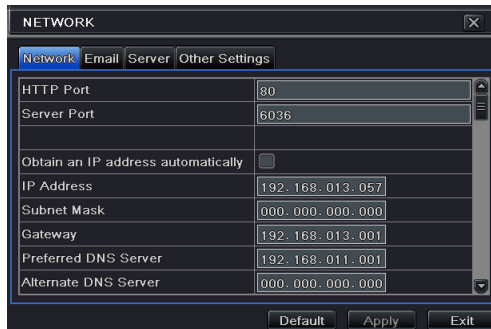


**Fig 5-23 Network Configuration-Network**

**Step 2:** Set HTTP port. The default HTTP port is 80. If the value is changed, you shall add the port number when typing IP address in IE address blank. e.g. If HTTP port is set to 82 and IP address is http://192.168.0.25, you should input the following IP address: http://192.168.0.25:82 into IE browser.

**Step 3:** Set server port. The default server port is 6036.

**Step 4:** Connect internet. There are three ways to connect internet.

- If you have a DHCP server running and would like your NVR to automatically obtain an IP address and other network settings, check the checkbox beside "Obtain an IP address automatically". Then the device will distribute IP address, subnet mask, and gateway IP and DNS server.

- If you want to configure your own settings, disable “Obtain an IP address automatically” item and input the IP address, subnet mask, gateway IP and DNS server.
- If you connect internet through PPPoE, disable “Obtain an IP address automatically” item and check PPPoE checkbox and then enter username and password. Once the setup is completed, your NVR will automatically dial up into your network.

**Step 5:** Test the effectiveness of the network by clicking “Test” button after you set up the network.

**Step 6:** If the network is well connected, please click “Apply” button to save the setting.

## 5.6.2 Email

**To set up Email:**

**Step 1:** Enter into Menu→Setup→ Network→Email tab. Refer to Fig 5-24:

**Step 2:** Set SMTP Server and port.

**SMTP Server/Port:** The name and port number of SMTP server. You can set up SSL check (such as Gmail) according to actual needs.

**Step 3:** Set sender’s address and password.

**Step 4:** Set receiver’s email address and click “Test” button to test the validity of the mailbox.

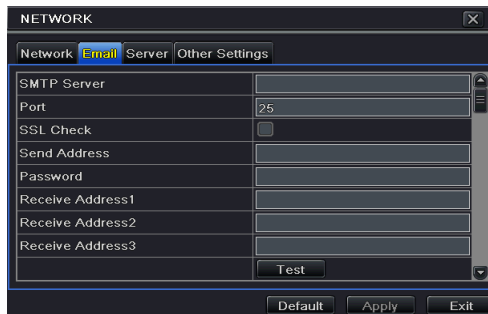


Fig 5-24 Network Configuration-Email

## 5.6.3 Server

This function is mainly used for connecting ECMS/NVMS. The setting steps are as follows:

**Step 1:** In the server interface, select “Enable” as shown in the Fig 5-25.

**Step 2:** Check the IP address and port of the transfer media server in the ECMS/NVMS. The default server port for auto report is 2009. If it is modified, please enter into the transfer media interface to check.

**Step 3:** Enable the auto report in the ECMS/NVMS when adding a new device. Then self-define device ID and input the remaining information of the device in the ECMS/NVMS.

**Step 4:** Input the above-mentioned server IP, server port and device ID in the server interface. Then click “Apply” button to save the setting. Now, the ECMS/NVMS system will automatically connect this device.

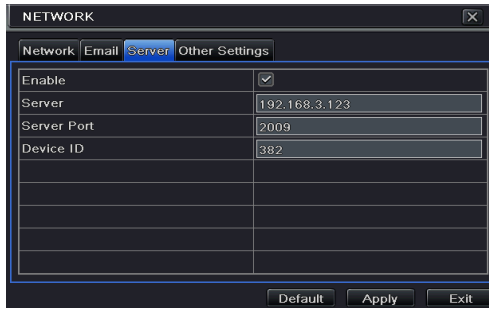


Fig 5-25 Network Configuration-Server

### 5.6.4 Other Settings

If your NVR is set to use PPPoE as its default network connection, you may set up DDNS to be used in connection. The setting steps are as follows:

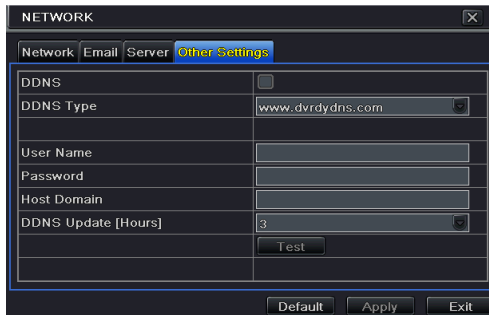


Fig 5-26 Network Configuration-Other Settings

**Step 1:** Enable DDNS server.

**Step 2:** Select DDNS server.

**Step 3:** Enter user name, password and host domain name of the registered website.

**Step 4:** Click “Test” button to test the effectiveness of the relevant information.

**Step 5:** Click “Apply” button to save the setting.

---

**Note:** The domain name selected by user is a banding domain name of NVR. User should logon the website provided by the server supplier to register a user name and password and then apply for a domain name online. After the successful application, user can access the device from the IE client by inputting that domain name.

---

➤ **Domain name Registration** ( Take [www.dvrdydns.com](http://www.dvrdydns.com) for example )

**Step 1:** Input [www.dvrdydns.com](http://www.dvrdydns.com) in the IE address bar to visit its website. Then click “Registration” button to register as shown below.

| NEW USER REGISTRATION                                                      |                                                                                                   |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| USER NAME                                                                  | <input type="text" value="XXXX"/>                                                                 |
| PASSWORD                                                                   | <input type="password" value="•••••"/>                                                            |
| PASSWORD CONFIRM                                                           | <input type="password" value="•••••"/>                                                            |
| FIRST NAME                                                                 | <input type="text" value="XXX"/>                                                                  |
| LAST NAME                                                                  | <input type="text" value="XXX"/>                                                                  |
| SECURITY QUESTION                                                          | <input type="text" value="My first phone number."/>                                               |
| ANSWER                                                                     | <input type="text" value="XXXXXXXX"/>                                                             |
| CONFIRM YOU'RE HUMAN                                                       | <div>718408</div> <div>New Captcha</div> <input type="text"/> <p>Enter the text you see above</p> |
| <input type="button" value="Submit"/> <input type="button" value="Reset"/> |                                                                                                   |

**Step 2:** Create domain name.

*You must create a domain name to continue.*

Domain name must start with (a-z, 0-9). Cannot end or start, but may contain a hyphen and is not case-sensitive.

**Step 3:** After you successfully request your domain name, you will see your domain in the list.

*Click a name to edit your domain settings.*

| NAME      | STATUS | DOMAIN                |
|-----------|--------|-----------------------|
| 654321ABC | ✓      | 654321abc.dvrddns.com |

Last Update: *Not yet updated* IP Address: 210.21.229.138

[Create additional domain names](#)

## ➤ DVR Setting

Connect DVR to the Network Client.

**Step 1:** Enter into Main menu→Network→Other Settings, checkmark DDNS, select “dvrddns” at the DDNS Sever pull down list box and input user name and password.

**Step 2:** Enter into configuration interface of the router to map the server port and IP address. Click Save button to save the setting

**Step 3:** Login IE browser and input registered domain name “http://www.xxx.dvrddns.com”, connect to DVR client.

You can also quickly register the domain name in this interface.

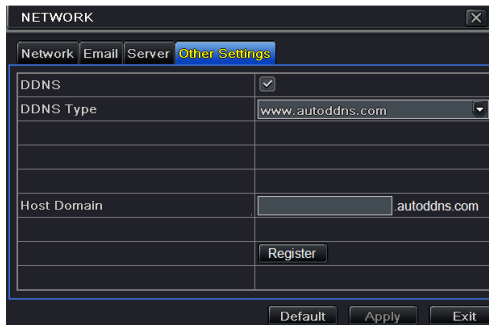
**Step 1:** Set the IP address manually in the network tab and then click “Other Settings” tab.

**Step 2:** Check “DDNS”.

**Step 3:** Select “www.autoddns.com” in DDNS Type column as shown above.

**Step 4:** Enter the host name at random, like 123.

**Step 5:** Click “Register” to register the domain name. When the successful prompt pops up, it means you are successfully register your domain name.



If your IP address is not WAN IP address, you should forward your IP address and port in your router. Then you can use the domain name plus HTTP port to access your DVR.

| DDNS server     |                                                                                                                                                                                                                                                                                                                                                            |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DDNS server     | Website provided by dynamic domain name supplier. The optional: <a href="http://www.dvrdyns.com">www.dvrdyns.com</a> , <a href="http://www.meibu.com">www.meibu.com</a> , <a href="http://www.dyndns.com">www.dyndns.com</a> , <a href="http://www.autoddns.com">www.autoddns.com</a> , <a href="http://www.no-ip.com">www.no-ip.com</a> and mintdns type. |
| User name       | User name for log in the website of domain name supplier                                                                                                                                                                                                                                                                                                   |
| Password        | Password for log in the website of domain name supplier                                                                                                                                                                                                                                                                                                    |
| Host domain     | The domain name user registered at the supplier's website.                                                                                                                                                                                                                                                                                                 |
| Update interval | The interval time of upgrading NVR IP address                                                                                                                                                                                                                                                                                                              |

## 5.7 User Management Configuration

This tab allows you to add normal or advanced users. To add user and set up user authority:

**Step 1:** Enter into Menu→Setup→Users. Refer to Fig 5-27:

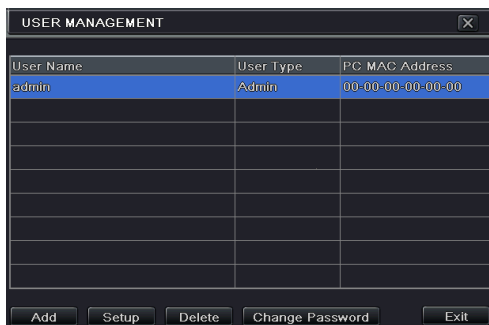


**Fig 5-27 User Management Configuration**

**Step 2:** Click Add button to display a dialog box as Fig 5-28:

**Step 3:** In General tab, input username, password and select user type. You can also check “Binding PC MAC Address” and input this address.

Fig 5-28 Add-General

**Step 4:** Click “OK” to save the setting.

**Note:** When the default value of binding PC MAC Address is 0, the user is not bound with the specified computer. If the bind option is used, the user would be able to log into the NVR only through the specific computer (carrying the MAC address).

**Step 5:** Select Authority tab and then assign the operation rights for particular user. Refer to Fig 5-29.

**Step 6:** Click OK to save the setting.

Fig 5-29 Add User-Authority

### To delete user:

**Step 1:** Enter into Menu→Setup→Users interface.

**Step 2:** Select the added user you want to delete and then click “Delete” button.

### To modify user:

**Step 1:** Enter into Menu→Setup→Users interface.

**Step 2:** Select the added user you want to modify and then click “Modify” button to do the relevant operation.

**To change user password**

**Step 1:** Enter into Menu→Setup→Users interface.

**Step 2:** Select the added user you want to change its password and then click “Change Password” button.

## 5.8 Advanced

Advanced configuration includes three submenus: reset, import/export and Block/Allow list.

### 5.8.1 Reset

Reset all settings the device will reboot.

### 5.8.2 Import/Export

User can export the data files into mobile storage devices as backup function, and then import specified data files from mobile storage device to NVR.

### 5.8.3 Block/Allow List

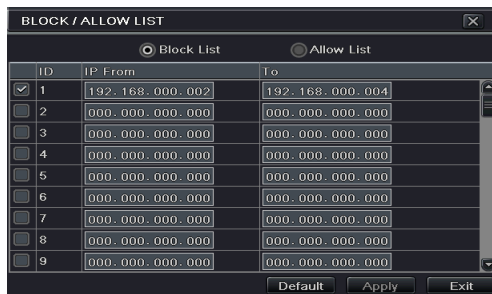


**Fig 5-30 Block/Allow List**

Here authorized user can prohibit computer users within a certain IP address range from accessing to NVR or allow computer users within a certain IP address range to access NVR. E.g. if an admin user doesn't want computer users within IP address range from 192.168.000.002 to 192.168.000.004 to access the NVR, he can check Block list option, and then input such IP address range. If it is required that computer users within a certain IP address range access NVR, they can check Allow List option and then do the required setting.

## 6 Search, Playback & Backup

Search configuration includes four submenus: time search, event search, file management and image.

### 6.1 Time Search

**Step 1:** Enter into Menu → Search → Time Search. Refer to Fig 5-1:

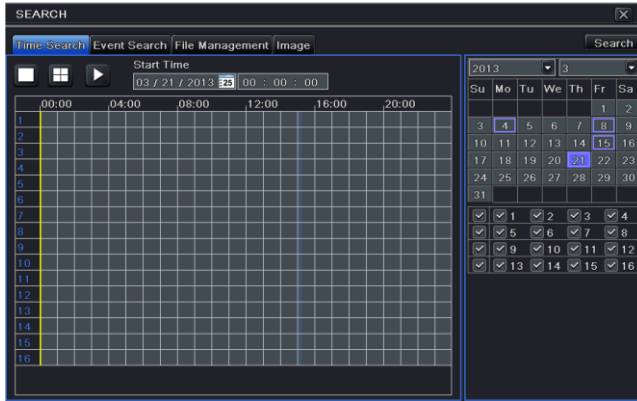
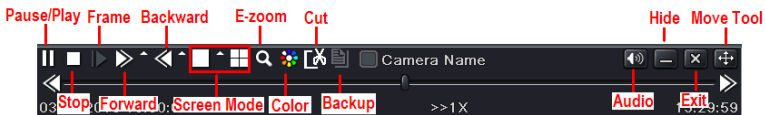


Fig 6-1 Search Configuration-Time Search

**Step 2:** Select date and channels on the right hand side and press the ‘Search’ button. A date with highlighted borderline indicates presence of data.

**Step 3:** Set the start time by clicking a particular grid or by entering the specific value in the start time field.

**Step 4:** Select the channel display mode and click Play  button to play record. Use the playback toolbar to control the playback.



To set backup during a certain period in the playback interface:

Select the start time by dragging the slider and click “Cut” icon. Then select the end time and click this icon again to confirm the record period. Next, click “Backup” icon to backup the record during this period.

## 6.2 Event Search

**Step 1:** Enter into Menu→Search→Event Search button. Refer to Fig 6-2:

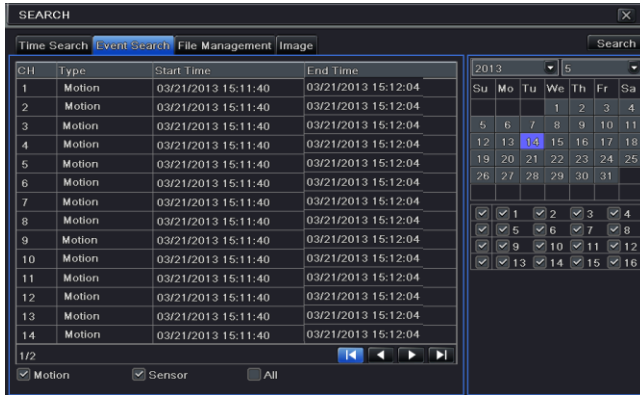


Fig 6-2 Search Configuration-Event Search

**Step 2:** Select date and channels on the right hand side. A data with highlighted borderline indicates presence of data.

**Step 3:** Checkmark Motion, Sensor or All accordingly.

**Step 4:** Click Search button to display the searched event information in the event list box.

**Step 5:** Double check a certain record file to playback.

## 6.3 File Management

**Step 1:** Enter into Menu→Search→File Management interface. Refer to Fig 6-3:

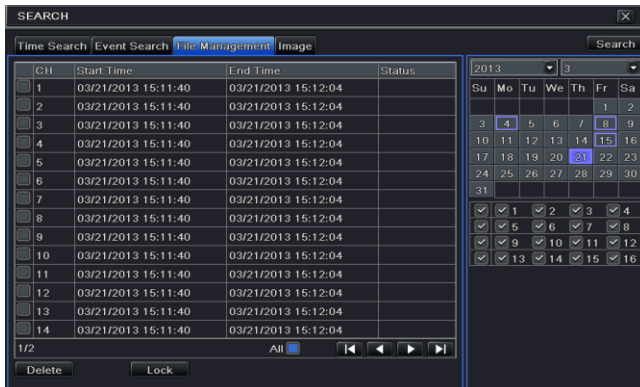


Fig 6-3 Search Configuration-File Management

**Step 2:** Select date and channels. The date with highlighted borderline indicates presence of data.

**Step 3:** Click Search button to display the searched files in the file list box.

**Step 4:** Use “All” button to lock/unlock or delete all files in the file management column.

**Step 5:** Double click an unlocked item to play.

**Lock:** Select a file and click Lock button to lock this file, after that, that file will not be deleted or covered.

**Unlock:** Select a locked file and click “Lock” button to unlock this file

**Delete:** Select an unlocked file and click “Delete” button to delete this file.

## 6.4 Search by Image

**Step 1:** Enter into Menu → Search → Image tab.

**Step 2:** Select data and channels on the right hand side.

**Step 3:** Press “Search” button to search for a recorded image.

**Step 4:** Once an alarm image has been identified, the user can double click the image to play recording.

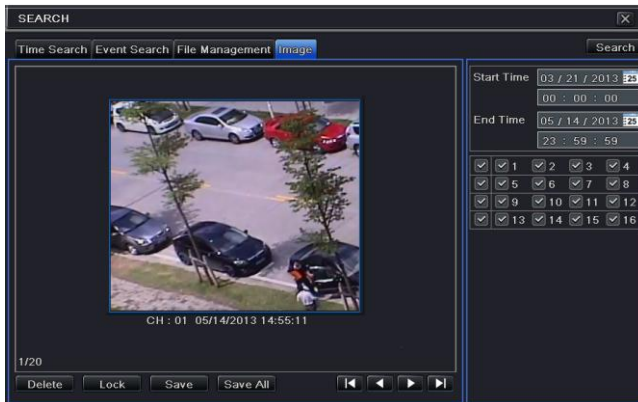


Fig 6-4 Search Configuration-Image

**Lock:** Select the image and click “Lock” button to lock this image.

**Save:** Click “Save” button to copy the image on the HDD.

**Save All:** Click “Save All” button to copy all images on the HDD.

## 6.5 Backup

This unit supports backup by built-in SATA DVD Writer with USB Flash. You can also make backup by IE browser via internet (see section 8.3.2 Remote backup).

**Step 1:** Enter into backup configuration. Refer to Fig 6-5:

**Step 2:** Set the start & end time, select channels and click Search button to display the searched data in the data backup list box.

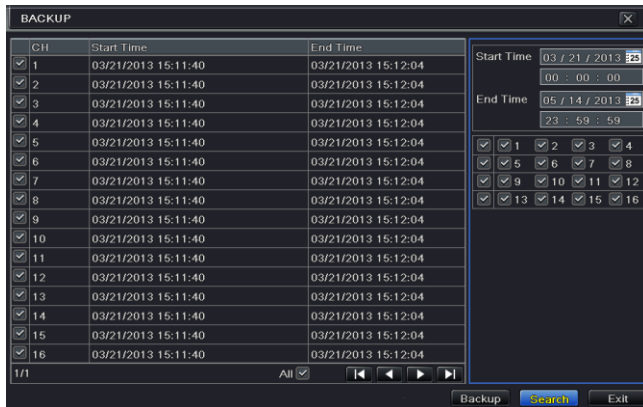
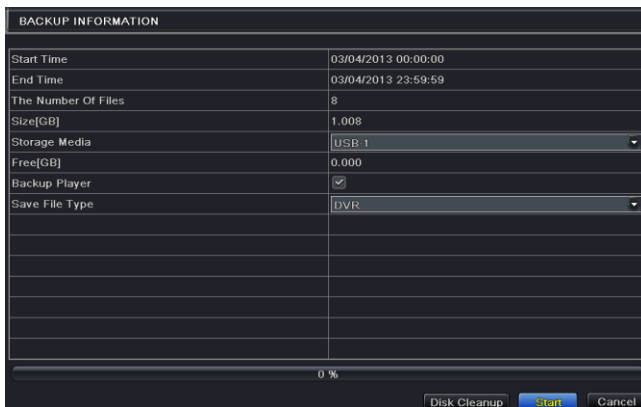


Fig 5-5 Backup Configuration

**Step 3:** Select a required file or checkmark “All” to select all data files. Click Backup button to display Backup information window.



**Step 4:** In the backup information interface, you can check the relevant information of backup files, storage type, save file type, etc. Then click Start button to start backup.

**Note:** If the backup files are saved in DVR format, please check backup player. Only this player can play these files in DVR format. If the backup files are saved in AVI format, you can play these files with common media player.

## 7 Manage NVR

### 7.1 Check System Information

Check system information includes six submenus: system, event, log, network, online user and record.

#### 7.1.1 System Information

---

In this interface, user can check the hardware version, MCU version, kernel version, device ID, etc.

#### 7.1.2 Event Information

---

In this tab, you can search for events like motion, sensor and video loss. The utility provides an interface to have a date based and a channel based search. This report can further be saved on a USB flash drive as an html file using the export button.

#### 7.1.3 Log Information

---

In this tab, you can search for relevant logs as per the set date and event which includes operation, setup, playback, backup, search, check information and error. This report can further be saved on a USB flash drive as an html file using the export button.

#### 7.1.4 Network Information

---

In this interface, you can check relevant parameters of network.

#### 7.1.5 Online Information

---

In this tab, you can check the details of the connected online users.

**Refresh:** refresh the current interface.

**Disconnect:** Disconnect the online users to access NVR. If this function is used by the admin, the particular PC will not be able to access the device for five minutes.

#### 7.1.6 Record Information

---

In this interface, you can check the resolution, ftp and record status including sensor alarm recording, motion recording, manual recording or schedule recording.

### 7.2 Manual Alarm

In this interface, user can trigger a manual alarm.

## 7.3 Disk Management

### 1. Format the disk

**Step1:** Enter into disk management tab.

**Note:** please format the hard disk before recording. If not formatted, it will show the status of the disk-free space, and total space at the bottom of screen.

**Step2:** Click Refresh button to refresh the disk information in the list box.

**Step3:** Select a hard disk and click Format button to start format.

**Note:** All recorded files in the hard disk will be lost once it is formatted.

### 2. Advanced

User may check model, S/N, firmware, health status of the disk in this interface. User also can monitor the temperature, internal circuit, dielectric material of the disk, analysis the potential problems of the disk and warn so as to protect its data.

## 7.4 Upgrade

The NVR can be upgraded by using USB flash drive. Get the upgrading software from your vendor when there is a new software version.

### Upgrade Steps:

**Step 1:** Copy the upgrade software which gets from vendor into the USB storage device.

**Step 2:** Connect the USB flash drive to the USB port.

**Step 3:** Enter Menu→Upgrade tab. Then the upgrade software name would be displayed in the upgrade list box.

**Step 4:** Select that software and then click upgrade button. It will upgrade automatically.

**Note:** Please wait for a while when the system reboots. Never cut off power during upgrading. The original configuration will be reserved after upgrade.

## 7.5 Logoff

Enter Main Menu → Logoff tab. A log off dialogue box will pop up. The device will log off by clicking “OK” button. If you want to log in again, click Main Menu icon to enter into user name and password to re-login.

## 8 Remote Surveillance

### 8.1 IE Remote Surveillance

In order to view the NVR from a network it must be connected to a LAN/WAN or internet. The network setup should be done accordingly. Please refer to 5.6 Network Setup. This NVR supports IE browser, on Windows XP and Vista platform.

#### 8.1.1 On LAN

---

Step 1: Enter into the NVR's Main Menu→Setup→Network tab to input IP address, Subnet Mask, etc. If using DHCP, please enable DHCP in both the NVR and the router.

Step 2: Enter Record Setup to set network video parameters like resolution, frame rate etc.

Step 3: Open IE on a computer on the same network. Input the IP address of the NVR in IE address bar and press enter.

Step 4: IE will download ActiveX component automatically. Enter the username and password in the subsequent window.

**Notice: If HTTP port is not 80, other number instead, need add the port number after IP address. For example, set HTTP port as 82, need input IP address like 192.168.0.25:82.**

User name and password here are the same with that used on the NVR. The default is admin and 123456.

#### 8.1.2 On WAN

---

There are two ways for the NVR to connect to internet.

##### **1. Connect the NVR to internet through router or virtual server**

Step 1: Enter into the NVR's Main Menu→Setup→Network interface to input IP address, Subnet Mask, etc. If using DHCP, please enable DHCP in both the NVR and router.

Step 2: Forward IP address and port number in Virtual Server setup of the router or virtual server. Configure the firewall to allow accessing the NVR.

**Note: Port forwarding settings may be different in different routers and server. Please refer to the router's manual for details.**

Step 3: Open IE browser, input IP address, or dynamic domain name and enter. If HTTP port is not 80, add the port number after IP address or domain name.

Step 4: IE will download ActiveX automatically. Then a window pops up and asks for user name and password. Input name and password correctly, and enter to view.

**Note: If you cannot download and install ActiveX, please refer to FAQ Q8.**

##### **2. Connect the NVR to internet through PPPoE directly.**

Step 1: Enter into the NVR's Main Menu→Setup→Network interface to enable PPPoE and then input user name and password received from your ISP. Next, click 'Apply'. The NVR will connect to the server and would give a confirmation message.

Step 2: When accessing the remote interface of NVR, user can input WAN IP to access directly (user can enter into Main menu→Information→Network interface to check IP address).

Step 3: If users want to utilize dynamic domain name, please apply for a domain name in a DNS server supported by the NVR or router. Then add to the NVR.

Step 4: The following setting steps are as the same as Step3 and Step 4 in Point 1.

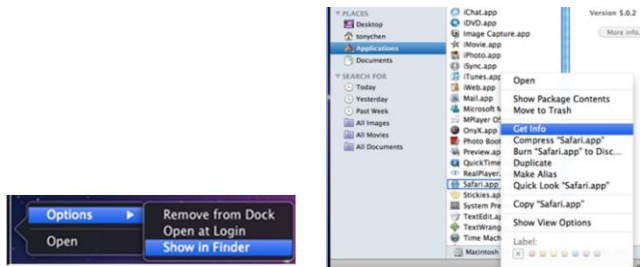
## 8.2 Remote Surveillance through Apple PC

**Note:** Because the current plug-in version of client end just only supports 32-bit mode, so the safari browser shall start 32-bit mode. If the browser is the earlier MACOS version, the default setting is 32-bit mode and the setting can be skipped.

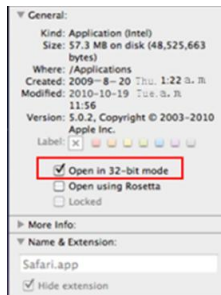
The Setting steps are as follows:

First: Right click safari icon and select “Show in Finder”.

Second: Select Applications→Right click “Safari. App”→Select “Get Info”.



Third: Select “open in 32- bit mode”.



### 8.2.1 On LAN

Step 1: After starting Apple computer, click Apple icon. The following window will pop up. Please select “System Preferences”→”Internet & Wireless”→click “Network” .



Step 2: Enter into Network interface and then click “Ethernet Connected” to check the internet connection of Apple PC.

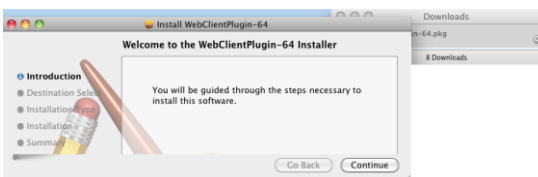


Step 3: After acquiring the IP address, Subnet Mask and so on, please enter into the NVR’s Main Menu→Setup→Network interface to manually input IP address, Subnet Mask and Gateway according to the configuration of PC. The network segment should be the same as the PC. If using DHCP, please enable DHCP in the NVR and router.

Step 4: After finishing the above information, users can enter LAN IP and http port in the Safari browser. For example: input http://192.168.1.100:81(here 192.168.1.100 is LAN IP of NVR, 81 is the http port of NVR). Click “ ”button, the browser will download Active X control as shown below:



Step 5: Click  icon and then select the Active X control, the welcome interface will be shown. Click “Continue”→“Install” button , the following window will pop up :



Input the name and password of Apple PC and then click “OK” to install this Active X control.  
 Step 6: After finishing installing the Active X control, please quit from the Safari browser. Right click Safari icon on the desktop and then select “Quit” button to quit the browser. Then restart Safari browser. Input the IP address and http port to enter into the login interface of NVR.

## 8.2.2 On WAN

There are also two ways for NVR to connect to Internet.

### 1. Connect the NVR to internet through router or virtual server.

Step 1: The network setups are the same as step one to step four of point 1 on WAN of IE remote surveillance.

Step 2: Enter WAN IP and http port in the Safari browser to install the Active control. Then a window pops up and asks for user name and password. Input name and password correctly, and enter to view.

### 2. Connect the NVR to internet directly.

Step 1: The network setups are the same as step one of point 2 on WAN of IE remote surveillance.

Step 2: Enter WAN IP and http port or domain name in the Safari browser to install the Active control. Then a window pops up and asks for user name and password. Input name and password correctly, and enter to view.

## 8.3 Remote Preview

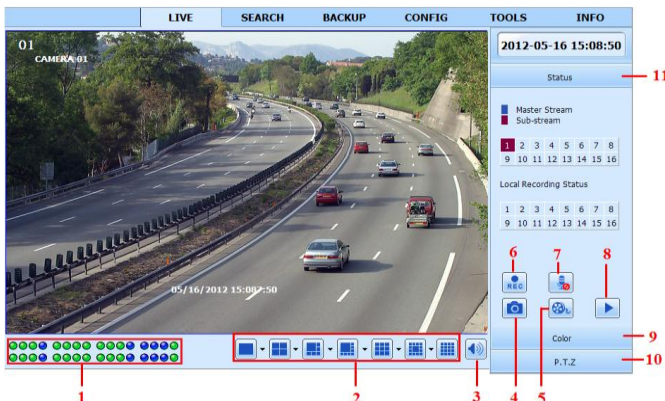


Fig 8-1 Remote Live Preview

**Symbol and function Definitions:**

|    |                   |    |                          |   |                     |
|----|-------------------|----|--------------------------|---|---------------------|
| 1  | Channel indicator | 2  | Screen display mode      | 3 | Volume              |
| 4  | Snap              | 5  | Start IE record          | 6 | Start manual record |
| 7  | Start Talk        | 8  | Playback                 | 9 | Color               |
| 10 | P.T.Z             | 11 | Master/sub stream status |   |                     |



**Note:** Click  button to record manual and the record file will be saved in user's PC.

**Screen display mode:**

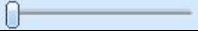
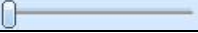
**Snap pictures**

The system will automatically capture pictures and save those pictures in the computer by clicking "Snap"  icon,

User should set up the path for those pictures in the Configuration→Local configuration.

**Color adjustment:**

Drag the slide bar to adjust Brightness, Contrast, Hue, and Saturation. Click Default to reset them to original value.

| Buttons                                                                                                                                                             | Description                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
|   | Drag the scroll bar to adjust the brightness of channel                                     |
|   | Drag the scroll bar to adjust the contrast of channel                                       |
|   | Drag the scroll bar to adjust the saturation of channel                                     |
|   | Drag the scroll bar to adjust the hue of channel                                            |
|                                                                                    | Click this button to recover the default value of brightness, contrast, saturation and hue. |
|                                                                                   | Save the adjustment                                                                         |

**PTZ control**

Please connect speed dome to the device via RS485 firstly, make sure the protocol of the speed dome is supported by the device and set the relative parameters manually. User can control the dome up, down, right, left or stop rotating on Control Center, adjust rotation speed, Iris and zoom, focus on the dome, and set the presets, etc.

Buttons definition:

| Buttons                                                                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  to rotate the dome upwards.  to rotate the dome diagonally up-right.<br> to rotate the dome diagonally up-left.  to rotate the dome diagonally down-right.<br> to rotate the dome downwards.  to rotate the dome diagonally down-left.<br> to rotate the dome towards left.  to rotate the dome |

|                                                                                   |                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | dome towards right  to stop rotating the dome.                                                                                                                                                                                                                  |
|  | Drag the scroll bar to adjust rotating speed of the dome.                                                                                                                                                                                                                                                                                       |
|  | 'Iris' button. Click  button near 'Iris' button to increase light of the dome. Click  button near 'Iris' button to decrease light of the dome.                                |
|  | 'Zoom' button. Click  button near 'Zoom' button to zoom in the locale picture of this camera. Click  button near 'Zoom' button to zoom out the locale picture of this camera. |
|  | 'Focus' button. Click  button near 'Focus' button to have long focus. Click  button near 'Focus' button to have short focus.                                                  |
|  | Go to the Preset                                                                                                                                                                                                                                                                                                                                |
|  | Select and do auto cruise                                                                                                                                                                                                                                                                                                                       |
|  | Track                                                                                                                                                                                                                                                                                                                                           |
|  | Auto scan                                                                                                                                                                                                                                                                                                                                       |
|  | Wiper button                                                                                                                                                                                                                                                                                                                                    |
|  | Light button                                                                                                                                                                                                                                                                                                                                    |

Click the right mouse on the live interface to display a pull-down menu as below.

**Stream:** The NVR supports master stream and sub stream. Master stream has higher frame rate, max 25fps (PAL)/30fps (NTSC) for every channel, but it needs higher network bandwidth; second stream has low frame rate, max 6fps (PAL)/7fps (NTSC) for every channel, but it requires low network bandwidth as compared to the master stream. Therefore, users can select the stream according to their bandwidth.

**All to sub stream:** Set all channel to master stream or sub stream.

**Enable audio:** Enable or disenable audio.

**Full screen:** The live preview picture will display in full screen and the tool bar will be hidden; double click left or click right mouse to return.

**Zoom in:** Single channel large screen electronic amplification. Click the channel which needs to be zoomed. Right click to select zoom in button to zoom in the image. Double click or right click to exit.



Fig 8-2 Right Key Sub Menu

## 8.4 Remote Playback & Backup

### 8.4.1 Remote Playback

Click  button to enter into record playback interface. Refer to Fig 8-3:

Select the record date and channels and double-click the file name in the record file list box. Then user can play that file and preview the picture.

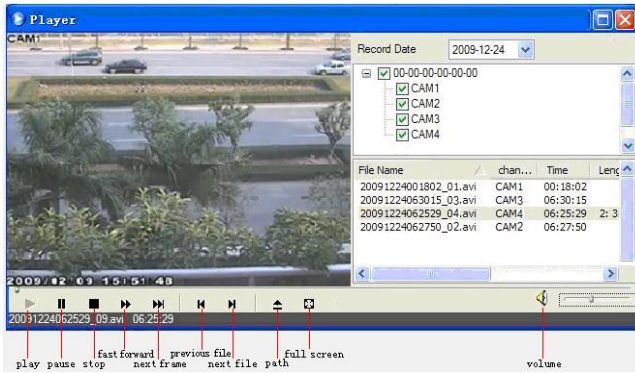


Fig 8-3 Play Record File Interface

This NVR supports remote time search, event search and file management.

### By Time Search:

**Step 1:** Enter into Search→Time search. Refer to Fig 8-4:

**Step 2:** The highlight date in the area② indicates recorded data. Select the date in the area ② and record channels in area③.

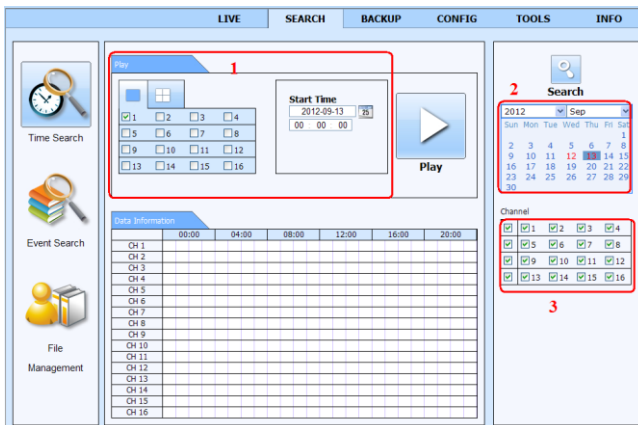


Fig 8-4 Time Search Interface

**Step 3:** Click “Search” button. The record data will be displayed in the data information list box.

**Step 4:** Set the Start time and display mode in the area① as required.

**Step 5:** Click “play” button to playback.

**Step 6:** Click the relevant buttons in the interface for operation, like FF, pause, change channel mode, research, etc. Please refer to Fig 8-5:

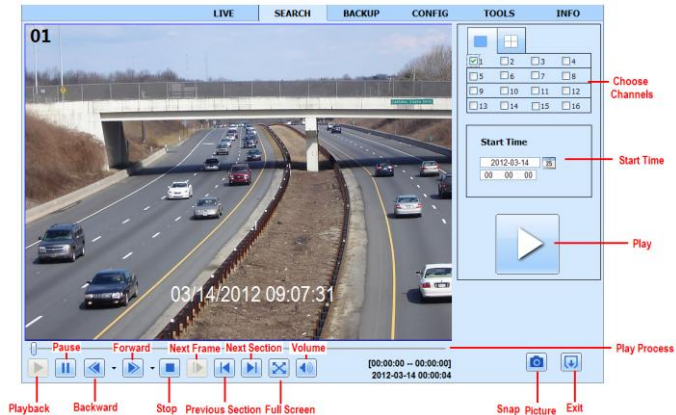


**Fig 8-5 Time Search Playback**

**By Event Search:**

**Step 1:** Enter into Search→Event Search. Refer to Fig 8-6:

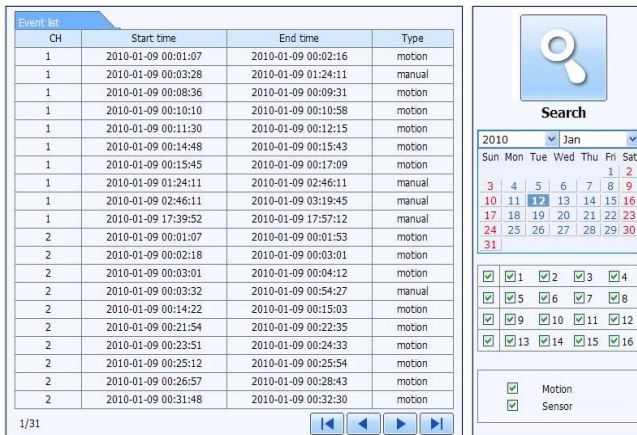


**Fig 8-6 Event Search Interface**

**Step 2:** Click the highlight date and select record channels.

**Step 3:** Checkmark the event type: motion and sensor.

**Step 4:** The events will be displayed in the event list box by clicking Search button.

**Step 5:** Double-click certain item to playback.

## File Management

**Step 1:** Enter into Search→File management. Refer to Fig 8-7:

**Step 2:** Select highlighted date and channels.

**Step 3:** Click “Search” button to search the recorded files.

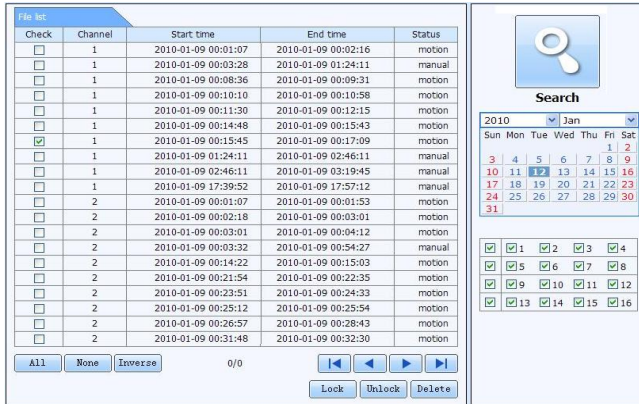


**Fig 8-7 File Management Interface**

**Lock:** Select certain file item in the file list box and then click “Lock” button to lock this file that ca not be deleted or overlaid.

**Unlock:** Select a locked file and then click “unlock” button to unlock this file.

**Delete:** Select an unlock file and then click “delete” button to delete this file from file list.

## 8.4.2 Remote Backup

Click Backup button to enter into backup interface. Refer to Fig 8-8:

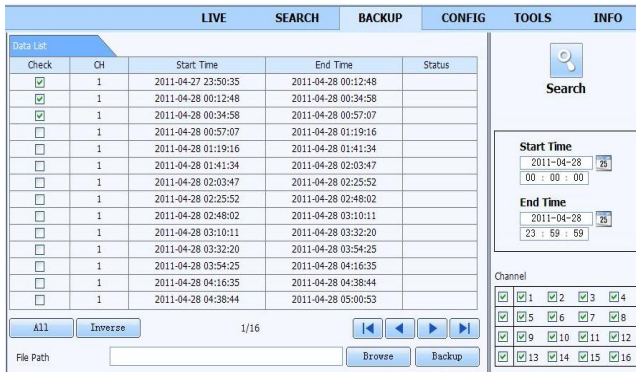


**Fig 8-8 Remote Backup Interface**

**Step 1:** Select channels, set the start and end time and then click “search’ button to display the

file information in the file list box

Step 2: Select backup files and click “browse” button to set the path. Then click “backup” button to start backup. The backup files will be saved on user’s PC.

## 8.5 Remote System Configuration

You can do remote setup of the device which includes functions like basic configuration, live configuration, record configuration, schedule configuration, alarm configuration, network configuration and user configuration. You should select an option from the menu list on the left and then set up the relative parameters. Only one user can do configuration setup at a given point of time. Click Config tab to enter into the below interface as Fig 8-9:

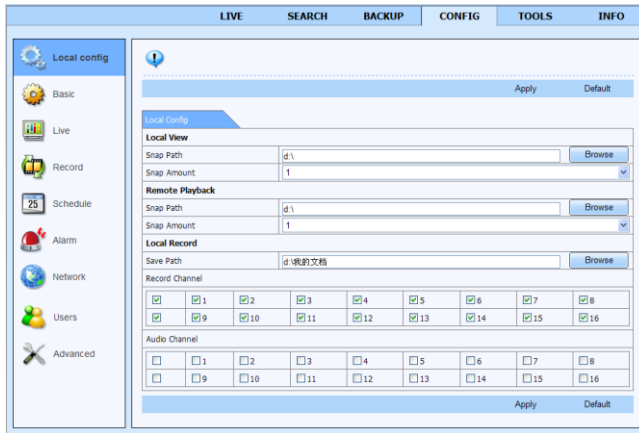


**Fig 8-9 Remote System Configuration**

The sub menu list and the options in every menu are similar to that of the NVR. Please refer to Main Menu Setup Guide for more details.

## 8.6 Tools

Click on tool’s tab to access the disk management tool. You can view the status of the HDD, change/view the read/write properties and can also format the HDD remotely.

## 8.7 Remote Information

The Info tab provides a web based interface to access the general information pertaining to the NVR’s settings. It includes five submenus: System, Event, Log, Network and Online users. The sub menu list and the options in every menu are similar to that of the NVR. Please refer to System information for more details.

**Log List**

| Type                   | User Name | Time                | IP Address     |
|------------------------|-----------|---------------------|----------------|
| File Management        | admin     | 2012-03-27 10:54:34 | 192.168.0.1    |
| Event Search           | admin     | 2012-03-27 10:52:45 | 192.168.0.1    |
| Event Search           | admin     | 2012-03-27 10:52:45 | 192.168.0.1    |
| Stop                   | admin     | 2012-03-27 10:52:38 | 192.168.0.1    |
| Play                   | admin     | 2012-03-27 10:39:05 | 192.168.0.1    |
| Time Search            | admin     | 2012-03-27 10:34:44 | 192.168.0.1    |
| Logon                  | admin     | 2012-03-27 10:21:47 | 192.168.0.1    |
| Logoff                 | admin     | 2012-03-27 09:52:37 | 192.168.0.1    |
| Logon                  | admin     | 2012-03-27 09:51:35 | 192.168.0.1    |
| Check Network Status   | admin     | 2012-03-27 09:49:38 | 127.0.0.1      |
| IP Camera Connected    | system    | 2012-03-27 00:12:12 | 192.168.20.205 |
| IP Camera Connected    | system    | 2012-03-27 00:12:11 | 192.168.20.201 |
| IP Camera Disconnected | system    | 2012-03-27 00:12:11 | 192.168.20.201 |
| IP Camera Connected    | system    | 2012-03-27 00:12:11 | 192.168.20.215 |
| IP Camera Disconnected | system    | 2012-03-27 00:12:11 | 192.168.20.215 |

1/1  
Export Path:

**Start Time**  
2012-03-27 00:00:00

**End Time**  
2012-03-27 23:59:59

- ☒ System Control
- ☒ Config
- ☒ Playback
- ☒ Backup
- ☒ Media Search
- ☒ View Information
- ☒ Error

Fig 8-10 Remote Information Search

**Note:** There may be slight differences with respect to functions of remote surveillance between through IE and through Apple PC. Here we only take IE remote access for example.

# Appendix A    FAQ

**Q1. Why can't the NVR turn on even after connecting to the power?**

- a. The power adapter could have gone bad. Please change a new power adapter.
- b. The power from the adapter may be not enough for operating the NVR. Please use the power adaptor supplied along with the NVR.
- c. It could be a hardware problem.

**Q2. There is live image display without menu, why?**

- a. Check whether the monitor is connected to the main video out. The monitor might be connected to VGA /HDMI port whereas the NVR may be set for output through BNC or vice versa. Long press Exit/ESC key to toggle the output modes.

**Q3. The NVR LED turns on, however there is no output. Why?**

- a. The power from the adapter may be not enough for operating the NVR. Please use the power adaptor supplied along with the NVR.
- b. It could be a wiring issue. Please check the connection for the same.
- c. Check the monitor settings.

**Q4. Why are no images displayed on few or all the channels of the NVR?**

- a. It could be a wiring issue. Please check the cable and the ports of the cameras.
- b. The problem can also be related to cameras. Please check the same.
- c. Please make sure that you have added and enabled the cameras.

**Q5. Why can't I find the HDD?**

- a. The power from the adapter may be not enough for operating the NVR. Please use the power adaptor supplied along with the NVR.
- b. It could be a wiring issue. Please check the power and data cables of the HDD.
- c. The HDD could have gone bad. Change a new one.

**Q6. The system cannot record, why?**

- a. Make sure the HDD was formatted prior to use.
- b. Maybe the user hasn't enabled the record function or has done incorrect setup. Please refer to Record Configuration for more details .
- c. Maybe HDD is full and thus the NVR is not able to record. Check HDD information from Disk management and if required, please enable the recycle function.
- d. Check the attributes of the HDD. It might be set to read only mode.
- e. The HDD could have gone bad. Please change another one.

**Q7. Mouse does not work. How can I do?**

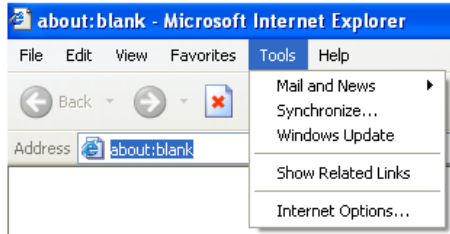
- a. The mouse should be connected to the USB port at the rear side.
- b. After connecting the mouse, allow the NVR to detect the mouse for seconds. If not detected, try restarting the NVR.

c. The mouse may be incompatible or faulty. Please change a mouse.

### Q8: ActiveX control cannot be downloaded. How can I do?

a. IE browser blocks ActiveX control. Please do setup as per the steps mentioned below.

① Open IE browser. Click Tools----Internet Options....



② select Security-----Custom Level....Refer to Fig 8-1.

③ Enable all the sub options under “ActiveX controls and plug-ins”. Refer to Fig 8-2.

④ Then click Ok to finish setup.

b. Other plug-ins or anti-virus may block ActiveX. Please disable or do the required settings.

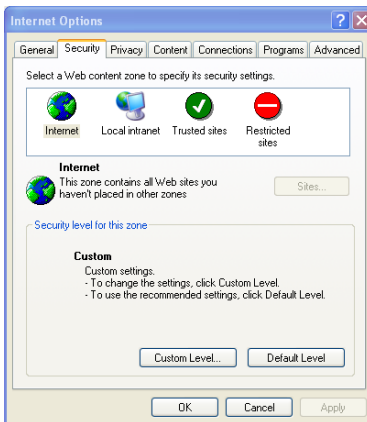


Fig 8-1

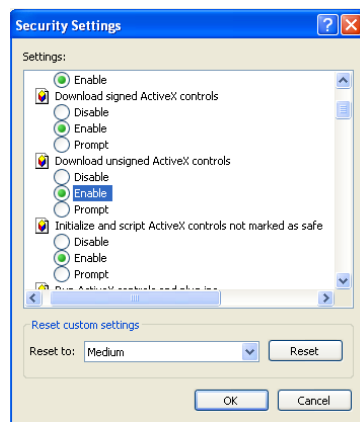


Fig 8-2

### Q9: NVR displays “please wait...”all the time. Why and How can I do?

a.HDD power cable and data cable may not be well connected. Please check the connections for HDD.

b. It is also possible that the NVR was forced to stop because HDD has a bad sector and it may have caused the system to halt. Check with a good known HDD or try formatting the existing HDD.

### Q10: How to input password and numbers in the interface?

Click the password or the input box, a small keyboard will pop up. Please select characters to

be input (the initial password is 123456), or you can use the digital keys on the front panel, or the digital keys on the remote controller.

**Q11: A hard disk is being identified as a new device however it was being used with another NVR of same model. Should it be formatted prior to use?**

It is possible to migrate an HDD from one NVR to another provided that the NVRs are of the same model and that the HDD being migrated would be used as the sole disk in the new NVR. However in cases where the new NVR already contains a HDD, the migrated disk being installed would have to be formatted. In general migrating disks from one NVR to another is not recommended.

**Q12: What is the minimum configuration required for remote monitoring?**

| PC Module   | Parameters                                            |
|-------------|-------------------------------------------------------|
| CPU         | Intel Celeron 2.4G                                    |
| Motherboard | Intel 845                                             |
| HDD         | 80G                                                   |
| RAM         | 512M                                                  |
| VGA         | NVIDIA GeForce MX440/FX5200<br>ATIRADEON 7500/X300    |
| OS          | Windows 2000(SP4 above) /Windows XP(SP2 above) /VISTA |
| DirectX     | 9.0                                                   |

**Q13: How to handle the situation that the codec Control is blocked when downloading in the VISTA or Win7 system?**

This problem can be fixed in two ways:

- Enter Control Panel → User Account and Family Safety → User Account Control (refer to Fig 13-1); click Turn User Account on or off. Cancel Use User Account Control (UAC) to help protect your computer.
- Right click IE browser (refer to Fig 13-2), select Run as administrator to run browser.



Fig 13-1

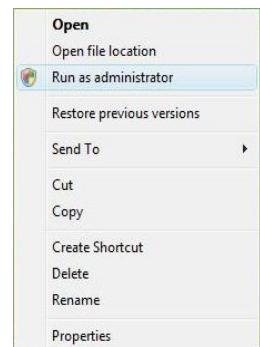
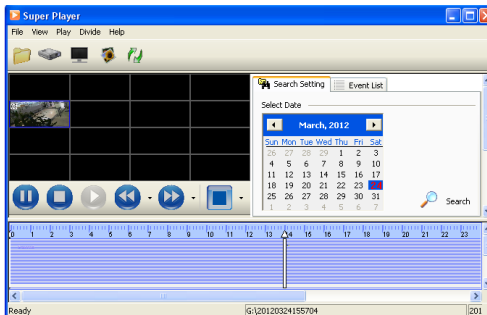
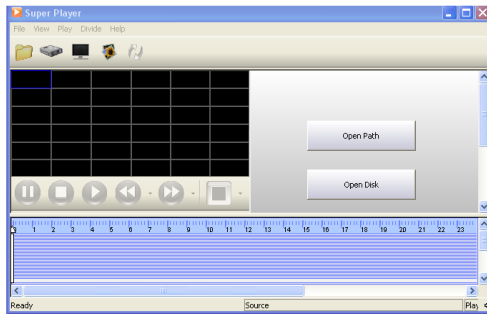


Fig 13-2

#### Q14. How to play the backup file?

- Insert your USB device where the backup files are saved in the USB port of PC. If your files are saved in DVR format, you must have already downloaded the backup player box before doing backup. Then double click to open your USB disk to find your backup files and backup player. Double click  icon to install backup player.
- After you install it, open this player and click “Open Path” button to open your backup file. Next, click  play button to play the backup file. Double click the image and then right click to enable audio. If you save your backup files in AVI format, you can directly open your file by using the media player which supports this format.



## Appendix B Calculate Recording Capacity

You can calculate the size of hard disk according to the storage time and NVR recording settings. The formula is as follows in full frame rate condition. Used space per hour (MB/h) = Bitrate(kbps)  $\div$  8  $\times$  3600  $\div$  1024. The below are the details at different settings.

| Resolution | Frame Rate   | Bit Rate (kbps) | Used Space(MB/h) |
|------------|--------------|-----------------|------------------|
| 1080P      | 15fps (NTSC) | 12M             | 2700             |
|            |              | 8M              | 2025             |
|            |              | 7M              | 1575             |
|            |              | 5M              | 1350             |
|            |              | 4M              | 900              |
| 720P       | 30fps (NTSC) | 6M              | 2700             |
|            |              | 4M              | 1800             |
|            |              | 2M              | 900              |
|            |              | 1M              | 450              |
|            |              | 256             | 113              |

The calculation format is: **Total Recording capacity =Used space per hour (MB/h) (coverage rate of hard disk)  $\times$  recording time (hour)  $\times$ channel numbers**

For instance, one customer sets resolution to1080P, frame rate to 15fps, bitrate to 4M and enables total 4 channels. He wants the unit to record continuously in a month. Below is the calculation:

**Total Recoding capacity =900 (mb/h) X 24(hours/day) X30(days) X4 (channels)= 2592000 (MB)=2531.25(GB)**

Therefore, customers just install two SATA HDDs with 1.5TB, it can almost record for one month.

# Appendix C Compatible Devices

## 1. Compatible USB drive after test.

| Brand         | Capacity       |
|---------------|----------------|
| SSK           | 512MB, 1G, 2GB |
| Netac         | 4GB            |
| Kingston      | 2GB            |
| Aigo          | 2GB            |
| Smatter vider | 1GB            |
| SanDisk       | 4GB            |

## 2. Compatible SATA CD/DVD writers after test

| Brand   | Model            |
|---------|------------------|
| TECLAST | GH22NP20/TL-22XD |
| BENQ    | DW220S-0K4       |
| LITEON  | DH—20A6S01C      |
| LITEON  | DH-20A4P02C      |
| SAMSUNG | TS-H653B         |

## 3. Compatible HDD list

| Brand                 | Capacity                         |
|-----------------------|----------------------------------|
| Seagate Barracuda     | 80G/160G/250G/320G /1.5T/2TB/3TB |
| Seagate SV35.3        | 1T                               |
| Seagate Pipeline HD.2 | 500G                             |
| Maxtor Diamondmax     | 160G                             |
| HITACHI Deskstar      | 80G/160G                         |
| WD WD1600JS           | 160G                             |
| Samsung HD161HJ       | 160G                             |

## Appendix D 8-CH Specifications

|                         |                                                                          |
|-------------------------|--------------------------------------------------------------------------|
| Compression format      | H.264                                                                    |
| Video output            | BNC×1; VGA×1; HDMI×1                                                     |
| IP Input                | 8 CH 1080P @ 15fps or 4 CH 1080P@30fps<br>8 CH 720P@30fps; 8 CH D1@30fps |
| HDMI/VGA Resolution     | 1080P/1280*1024 /1024*768/ 800*600                                       |
| Record Resolution       | 1080P , 720P, D1                                                         |
| Audio Input             | RCA X1                                                                   |
| Audio Output            | RCA X1                                                                   |
| Alarm Input             | NO or NC 8 CH                                                            |
| Alarm Output            | 4CH                                                                      |
| Record Mode             | Manual / Sensor /Timer / Motion detection                                |
| Simplex/Duplex/Triplex  | Pentaplex                                                                |
| Common Network Port     | RJ45 x1                                                                  |
| Communication Interface | RS485, USB2.0 x 2 (one for backup, another for USB mouse)                |
| Disk Info               | SATA x 4+DVD-RW x 1 or SATA x 8; E-SATA x 1                              |
| Remote controller       | YES                                                                      |
| Power Supply            | AC110V/220V                                                              |
| Temperature             | 0℃-50℃                                                                   |
| Humidity                | 10%-90%                                                                  |

## Appendix E 16-CH Specifications

|                         |                                                                             |
|-------------------------|-----------------------------------------------------------------------------|
| Compression format      | H.264                                                                       |
| Video output            | CVBS ×1; VGA ×1; HDMI ×1                                                    |
| IP Input                | 16 CH 1080P @ 15fps or 8 CH 1080P@30fps<br>16 CH 720P@30fps; 16 CH D1@30fps |
| HDMI/VGA Resolution     | 1080P/1280*1024 /1024*768/ 800*600                                          |
| Record Resolution       | 1080P , 720P, D1                                                            |
| Audio Input             | RCA X1                                                                      |
| Audio Output            | RCA X1                                                                      |
| Alarm Input             | NO or NC 16 CH                                                              |
| Alarm Output            | 4CH                                                                         |
| Record Mode             | Manual / Sensor /Timer / Motion detection                                   |
| Simplex/Duplex/Triplex  | Pentaplex                                                                   |
| Common Network Port     | RJ45 x1                                                                     |
| Communication Interface | RS485, USB2.0 x 2 (one for backup, another for USB mouse)                   |
| Disk Info               | SATA x 4+DVD-RW x 1 or SATA x 8; E-SATA x 1                                 |
| Remote controller       | YES                                                                         |
| Power Supply            | AC110V/220V                                                                 |
| Temperature             | 0℃-50℃                                                                      |
| Humidity                | 10%-90%                                                                     |

## Appendix F 24-CH Specifications

|                         |                                                            |
|-------------------------|------------------------------------------------------------|
| Compression format      | H.264                                                      |
| Video output            | CVBS×1; VGA×1; HDMI×1                                      |
| IP Input                | 16 CH 1080P @ 30fps or 24 CH 1080P@15fps or 24 CH 720P 30F |
| HDMI/VGA Resolution     | 1080P/1280*1024 /1024*768/ 800*600                         |
| Record Resolution       | 1080P , 720P, D1                                           |
| Audio Input             | RCA X1                                                     |
| Audio Output            | RCA X1                                                     |
| Alarm Input             | NO or NC 16 CH                                             |
| Alarm Output            | 4CH                                                        |
| Record Mode             | Manual / Sensor /Timer / Motion detection                  |
| Simplex/Duplex/Triplex  | Pentaplex                                                  |
| Common Network Port     | RJ45 x1                                                    |
| Communication Interface | RS485, USB2.0 x 2 (one for backup, another for USB mouse)  |
| Disk Info               | SATA x 4+DVD-RW x 1 or SATA x 8; E-SATA x 2                |
| Remote controller       | YES                                                        |
| Power Supply            | AC110V/220V                                                |
| Temperature             | 0℃-50℃                                                     |
| Humidity                | 10%-90%                                                    |

